For Official Use only.

9304

GOVERNMENT OF INDIA

Report of the Second Meeting of the Central Advisory Board of Health

Held in Madras on 9th and 10th January 1939

PRINTED BY THE MANAGER, GOVERNMENT OF INDIA PRESS, SIMLA.
1939

TABLE OF CONTENTS.

PAGE.

1. List of persons attending the Board's meeting 1

2. Agenda 3

3. Proceedings :—

(*i*) Secretary's statement on Agenda item I—Confirmation of the Proceedings 4

(*ii*) Discussion on Agenda item II—Maternity and Child Welfare *ad hoc* Committee Report 7

(*iii*) Discussion on Agenda item III—Indian Vital Statistics 22

(*iv*) Discussion on Agenda item IV—Control of Spread of Cholera .. 31

(*v*) Discussion on Agenda item V—Public Health Organisation .. 44

(*vi*) Discussion on Agenda item VI—Cooperation in Public Health Measures 55

(*vii*) Discussion on Agenda item VII—Physical Education Committees 59

(*viii*) Other Business 64

4. Resolutions 70

5. Appendices :—

(*i*) Memorandum on Indian Vital Statistics (with three enclosures) .. 75

(*ii*) Memorandum on Prevention of the Spread of Cholera in India (with two enclosures) 109

(*iii*) Memorandum on Public Health Organisation 118

(*iv*) Memorandum on the Necessity for Cooperation in Public Health Measures (with one enclosure) 122

(*v*) Memorandum on Physical Education Committees 133

(*vi*) Replies received from Provincial Governments in regard to Resolutions passed by the Board in 1937 on Organisation of Provincial Public Health Departments 134

List of persons who attended the second meeting of the Central Advisory Board of Health.

GOVERNMENT OF INDIA.

1. The Hon'ble Kunwar Sir Jagdish Prasad, K.C.S.I., C.I.E., O.B.E., Member in charge, Department of Education, Health and Lands (*Chairman*).
2. Mr. M. W Yeatts, C.I.E., I C.S., Joint Secretary to the Government of India, Department of Education, Health and Lands.
3. Major-General E. W C Bradfield, C.I.E., O.B.E., M.B., M.S., (Lond.), F.R.C.S.(Edin.), K.H.S., I.M.S., Director General, Indian Medical Service.
4. Rani Sahiba Phul Kumari of Sherkot, Dhampur, United Provinces.
5. Colonel A. J. H. Russell, C.B.E., M.A., M.D., B.Ch., D.T.M., D.P.H., K.H.S., I.M.S., Public Health Commissioner with the Government of India. (*Member-Secretary*).

DEFENCE DEPARTMENT.

6. Colonel J. A. Manifold, D.S.O., M.B., V.H.S., R.A.M.C., Deputy Director of Hygiene and Pathology, Medical Directorate, Army Headquarters.

INDIAN STATES.

Hyderabad.

7. Dr. Hyder Ali Khan, L.R.C.P., M.R.C.S.(Eng.), F.R.C.S.(Edin.), Director, Medical and Public Health Department, H. E. H. the Nizam's Government, Hyderabad-Deccan

Mysore.

8. Dr. P. Parthasarathy, L.M.S., B.S.Sc., L.R.C.P., L.R.C.S., D.T.M., D.P.H., Director of Public Health with the Government of H. H. the Maharaja of Mysore.

Jodhpur.

9. Dr. E. W. Hayward, Principal Medical Officer and Director of Public Health, Jodhpur.

RAILWAY DEPARTMENT (RAILWAY BOARD).

10. Dr. H. R. Rishworth, Officiating Principal Medical and Health Officer, G. I. P Railway.

NON-OFFICIAL MEMBER.

11. Pandit Lakshmi Kanta Maitra, M.L.A.

GOVERNMENT OF MADRAS.

12. The Hon'ble Dr. T. S. S. Rajan, Minister in charge, Education and Public Health Department.

L90DGIMS

13. Major-General N. M. Wilson, O.B.E., M.R.C.S., D.T.M. and H. (Lond.), K.H.S., I.M.S., Surgeon General with the Government of Madras.
14. Lieut.-Colonel C. M. Ganapathy, M.C., M.B., Ch.B., D.P.H., I.M.S., Director of Public Health.
15. Dr. C. G. Pandit, M.B., D.P.H.(Lond.), D.T.M.(Eng.), Ph.D., Officiating Director, King Institute of Preventive Medicine, Guindy.

GOVERNMENT OF BOMBAY.

16. The Hon'ble Dr. M. D. D. Gilder, Minister in charge of Health.
17. Lieut.-Colonel A. Y. Dabholkar, M.C., M.B.B.S., B.Sc., D.P.H. (Eng.), D.T.M. & H.(Lond.), I.M.S., Director of Public Health.

GOVERNMENT OF BENGAL.

18. The Hon'ble Mr. Tamizuddin Khan, M.A., B.L., Minister of Public Health and Medical Department and Constitutions and Elections.
19. Lieut.-Colonel A. C. Chatterji, M.B.(Cal.), D.P.H.(Camb.), I.M.S, Director of Public Health.

GOVERNMENT OF THE UNITED PROVINCES.

20. Rai Bahadur Dr. Kalka Prasad Mathur, M.R.C.S., L.R.C.P., D.P.H., Director of Public Health.

GOVERNMENT OF PUNJAB.

21. Colonel G. G. Jolly, C.I.E., M.B., Ch.B.(Edin.), D.P.H., D.T.M. & H.(Lond.), V.H.S., I.M.S., Inspector General of Civil Hospitals.
22. Lieut.-Colonel C. M. Nicol, M.A., M.D.(Aber.), D.P.H.(Lond.), I.M.S., Director of Public Health.

GOVERNMENT OF BIHAR.

23. Mr. V. K. R. Menon, I.C.S., Secretary to the Government of Bihar, Local Self Government Department.

GOVERNMENT OF ASSAM.

24. The Hon'ble Srijut Ramnath Das, B.L., Minister in charge, Medical and Public Health Department.
25. Lieut.-Colonel A. M. V. Hesterlow, M.B., Ch.B.(Edin.), B.Sc., D.P.H.,(Edin.), D.T.M. & H.(Edin.), I.M.S., Director of Public Health.

GOVERNMENT OF SIND.

26. Lieut.-Colonel N. Briggs, M.R.C.S., L.R.C.P., D.P.H., I.M.S., Director of Health Services and Inspector General of Prisons.

GOVERNMENT OF ORISSA.

27. The Hon'ble Mr. B. Dube, Minister in charge of Local Self Government.
28. Lieut.-Col. G. Verghese, M.D., Ch.B., D.P.H., (St. And.), D.T.M., D.T.H.(Liv.), I.M.S., Director of Health and Inspector General

AGENDA.

I. To confirm the proceedings of the inaugural meeting held in Simla, on the 22nd and 23rd June, 1937, as contained in the Summary Report.

II. To consider the report of the Maternity and Child Welfare *ad hoc* Committee.

III. To consider a memorandum on vital statistics in India.

IV. To consider a memorandum on control of spread of cholera in India.

V. To consider a memorandum on public health organisations.

VI. To consider a memorandum on the necessity for cooperation in public health measures.

VII. To consider a note on the formation of a National Physical Education Committee.

VIII. To note the summary of observations made or action taken by Provincial Governments on the resolutions passed at the inaugural meeting of the Central Advisory Board of Health on agenda item III—organisation of provincial public health departments.

IX. Any other business.

Proceedings of the Second Meeting of the Central Advisory Board of Health, held in Madras, on 9th and 10th January, 1939.

A special report on Maternity and Child Welfare work in India (item 2) and explanatory memoranda on items 3 to 7 had been circulated before the meeting to all members of the Board.

The Chairman in opening the meeting suggested that the Secretary might briefly introduce each item on the agenda after which it would be open to discussion. This was agreed to.

ITEM I.—CONFIRMATION OF THE PROCEEDINGS.

The Secretary : There are certain points in the Summary Report to which I wish to refer. First of all, as regards Item I—Procedure—on page 9 of the Report. In accordance with the resolution passed at the last meeting, the amendments approved by the Board were carried out and the amended memorandum will be found on pages 20—22. No changes have been submitted since the report was circulated, so I may, perhaps, presume that the memorandum correctly represents the views expressed at the last meeting.

Item II.—In accordance with the resolution passed at the last meeting on the subject of quinine, Mr. Wilson was appointed to carry out an enquiry on the lines suggested by the Board. His report has now been received and is under the consideration of the Imperial Council of Agricultural Research and of the Government of India.

Item III.—Organisation of Public Health Departments. This question is not only dealt with in an additional memorandum which is already in your hands for discussion at this meeting, but the cyclostyled papers which have been distributed will indicate to you the action already taken by the different provinces and States.

Item IV.—In connection with the resolutions passed at the last meeting on nutrition surveys, a second class was held at Coonoor in March—April, 1938, which was attended by 12 officers,—three from the provinces and nine from Indian States. It is proposed to hold a third class for a limited number of officers this spring.

In respect of the function of the Board as a Central Information Bureau, a fair amount of material has been collected from various provinces and States and that is now in the process of being examined before it is distributed. As regards other publicity activities, two new health bulletins have been prepared and issued,—one on 'larvivorous fish' which will be useful to all malaria workers in India ; the second containing instructions for engineers in the avoidance of conditions liable to increase malaria in connection with engineering works. This bulletin has been prepared by the Malaria Institute of India in collaboration with high engineering authorities in India and Malaya who are in full agreement with its recommendations. The issue of this bulletin would seem to meet fully a suggestion received from one of the provinces that the question of anti-malaria engineering and the training of engineers in

anti-malaria works should be included in the agenda of this meeting. Four thousand copies have been printed and a number has already been distributed. In my opinion, this bulletin should play a most valuable part in developing the cooperation of engineers with malariologists in carrying out construction works, and I hope every Director of Public Health will make a point of studying it with care and of seeing that the recommendations it contains are given the attention they deserve. Four other bulletins* have been revised,—in some cases completely re-written ;—one has already been issued and the other three are in the press. It may be of interest to members to learn that over 25,000 copies of the first edition of Dr. Aykroyd's bulletin on Indian foods have been sold. It has been decided to issue the second edition at the same price of 2 annas.

A number of notes of different kinds have also been issued on tuberculosis ; whilst the malaria section of the Java Rural Hygiene Conference Report has been given wide publicity. At various intervals, press communiqués have also been issued on important items dealt with in the Public Health Commissioner's annual report and notes dealing with subjects discussed at the Research Workers' Conference have appeared in most Indian newspapers. The Public Health Commissioner has given a number of broadcast talks on public health subjects and further talks have been arranged during this and next month.

In respect of information on epidemic and other diseases affecting provinces and States, an extension of exchange of that information has been achieved, although, as I have already said in another connection, this exchange requires further development. As and when public health departments in the provinces and States develop, this process will, I hope, be extended still further.

In regard to subjects suggested for inclusion in the agenda of this meeting, I would like to draw attention to the fact that a considerable number of those suggested by different Governments were not accompanied by the detailed explanatory memoranda which it has been agreed should accompany all proposals. It will be realised that without these memoranda the Secretary of the Board cannot be expected to prepare for these meetings documents which would deal adequately with the suggested subjects. I would also like to point out that a considerable number of suggestions were received too late for consideration ; in fact, the agenda items had been approved by the Chairman and memoranda prepared on these, before many of them were received. It is essential that suggestions for the agenda, with explanatory memoranda, should be received at least 3-4 months before the meeting, and it was for this reason that Provincial Governments and States were asked as far back as March, 1938, for suggestions for the present meeting.

Paragraph 1 on page 16 of the Summary Report refers to a proposal for a committee to consider the joint civil, military and railway health problems which exist in India. This is dealt with in the memorandum under item No. 6 of to-day's agenda.

---

*(1) Malaria—man-made.
(2) Hookworm.
(3) Dracontiasis.
(4) The nutritive value of Indian foods and the planning of satisfactory diets.

On the recommendation made by the Board at its last meeting, an *ad hoc* committee was appointed to report on food adulteration. In ordinary circumstances this report would have been presented at this meeting, but it has been found impossible to do so for the following reasons :—

(1) the Maternity and Child Welfare report entailed much more work than was anticipated and it has been found impossible to give the time necessary for another special report,

(2) Dr. Hawley, Public Analyst with the Government of Madras, who is the most experienced food analyst in India and who was appointed as a member of the Food Adulteration Committee, was on leave during most of 1938. Lt.-Col. Nicol, another member, was also on leave for nine months. Without the active assistance of these two members the preparation of the report would have been seriously handicapped.

It is hoped that the report on food adulteration will be presented at the next meeting of the Board.

I think these remarks cover the important items in the Summary Report.

In reply to a question put by Pandit Lakshmi Kanta Maitra, the Secretary continued : I would draw the attention of the Hon'ble Member to resolution No. 3 of the last meeting which says that the Board recommends to Provincial Governments the necessity for providing funds for the dissemination of suitable propaganda material in regard to foods, etc., based on Health Bulletin No. 23. It can hardly be the function of a Central Advisory Board of Health to prepare material from an English report in several vernaculars for the whole of India. I think it was a wise decision to leave it to the Provincial Governments concerned.

Before leaving the first item on the agenda, the Chairman reminded the Board of their previous resolution by which it was decided that the next meeting of the Board should be held either in November or December at Delhi. He expressed himself as unable to hold the meeting in those months because the Central Legislature was sitting, but when he was in Madras later on last year the Hon'ble Prime Minister of Madras suggested that it might be desirable to hold meetings of the Board in different centres in India. That was the reason why the present meeting was being held in Madras. He hoped that the Hon'ble Ministers would approve of this departure from the previous decision of the Board. In reply, the Hon'ble Dr. Gilder said that not only did they approve of the change, but they thought that it would be a great advantage if they met in different places each year. From that point of view, he invited the Board to hold the next meeting in Bombay.

The Hon'ble Dr. Rajan expressed his gratitude to the Chairman for permitting the meeting to be held in Madras and agreed that it should meet in different parts of the country. He wished it to be recorded that the meeting had decided to go to the different provinces as and when invitations were received from them. If in any year no invitations were received then a meeting could be held in Delhi.

In approving of the Summary Report the Chairman said that paragraph No. 7 on page 22 of the Report would be modified in accordance with this decision.

The following resolution was unanimously adopted by the Board :—

The Board resolved that the meetings of the Central Advisory Board should be held in turn at different important centres in India.

ITEM II.—MATERNITY AND CHILD WELFARE *AD HOC* COMMITTEE REPORT.*

The Chairman : We now come to the most important item on the agenda, the Report of the Maternity and Child Welfare Committee. Colonel Russell will kindly introduce the Report.

Colonel A. J. H. Russell : In presenting this report to the Board, I make no manner of claim to sole authorship. I desire instead to express my gratitude to the experts on the Committee and particularly to Sir Mangaldas Mehta, Dr. Jean Orkney and Mrs. Mitra for all the valuable assistance they gave to us at headquarters in the preparation of the document which is now in your hands. Without their willing help, the report would not have taken the form it has nor would it be the useful guide which in my opinion it is to all interested in this branch of public health work.

The question of the manner in which the Board might best deal with this report has given me considerable thought. You will have noted that Chapter VIII contains no less than 53 different recommendations all of which are important, but I think everyone will agree that it would be impossible to consider these in detail at this meeting. As this is the first Special Report presented to the Board by one of its Committees, I have no precedent as a guide to procedure, but I hope that, after discussion, the members of the Board will find it possible to adopt the report as a whole by passing a formal resolution to that effect.

At the same time, there are a number of recommendations contained in Chapter VIII which seem to me to be of fundamental importance and I propose to confine my further remarks to those. They may, I think, be classified as either urgently required or as feasible propositions even under existing circumstances. These represent the foundations on which the whole structure of maternity and child welfare work in this country must be built.

In different paragraphs of the report reference has been made to the necessity for the appointment of a properly qualified and experienced woman medical officer of the status of Assistant Director of Public Health in each Provincial and State Public Health Department, if maternity and child welfare work is to be properly organised. As regards Madras Presidency, I am of course speaking to the converted, but unfortunately so far no other province or State has followed their good example. There can be no question that the duty of organising and supervising this branch of public health work is one which is peculiarly the function of medical women, who alone can understand and make free contact with the mothers of India's children.

Closely linked with this recommendation is another (No. 26) which refers to the employment of women doctors in the management and supervision of municipal and other local maternity and child welfare

*Published separately.

schemes. For the benefit of the mothers and children requiring advice and assistance, a woman doctor's services are essential because there are limitations to the employment of non-medical women in the maternity and child welfare centres. Here again, I am aware that Madras Presidency has gone some distance in the right direction. All I would add at this juncture is that the women doctors before appointment to such posts should have undergone special training in order that the schemes under their charge may develop on suitable lines both as regards the control of health visitors and the advice given to the mothers attending the centres. It is impossible for a woman doctor without special training to carry out these duties efficiently, *e.g.*, in the detection of early and easily corrected departures from health.

As regards special training (No. 30), we have now a diploma course in maternity and child welfare in the All-India Institute of Hygiene and Public Health and it is to be regretted that so far few medical women have seen fit to take that course.

Before leaving the question of providing welfare centres which trained medical women, I should like to stress the point that the function of these centres is primarily preventive (No. 26). There is some danger, especially where the staff is insufficiently trained, of the work of the centres developing to an undue extent a curative character and this has already occurred in certain areas. The centre must not usurp the functions of a hospital or dispensary, although I realise that under existing conditions in this country, where medical facilities are not always easily available, something must be done at the centre for relief of simple ailments. The report lays considerable importance on this point, though it recognises that to meet the situation suitably, larger numbers of rural dispensaries and rural medical officers are required.

Another recommendation (No. 12) stresses the importance of providing a sound training in prenatal and postnatal care to medical students and midwives. The better training of medical students in preventive medicine was the subject of a resolution passed at the last meeting of this Board and the recommendation to which I am now referring may be taken as an addendum to that resolution. In the opinion of the Special Committee, the additional instruction in maternity and child welfare work can best be effected by providing well-organised prenatal and postnatal clinics in all hospitals training students or midwives. It does not seem too much to suggest that those responsible for the curricula of medical students should include, in recognised courses of instruction in midwifery, attendance at such clinics.

Similarly with midwives, the existing courses of instruction should be expanded to include so many hours attendance at the hospital pre and postnatal clinics in order that these women may better realise the importance of the preventive aspects of their work.

The report correctly lays importance on the necessity for further research into the causes of maternal mortality and morbidity and infantile mortality (Recommendation No. 10). The Indian Research Fund Association has for years past financed a number of such enquiries, but the gaps in our knowledge are still wide and these can only be filled by investigations carried out in many different areas. It should, I think, be possible for the trained medical women in charge of local maternity and child welfare schemes to collect valuable information in this field.

Observations made at the centres might in time throw considerable light on the hitherto unsolved problems connected with maternal and infantile deaths in this country. Moreover, every Provincial and State Public Health Department should make a study of the researches already published on these subjects and should do everything possible to collect additional information and to apply the knowledge now available.

Finally, I would refer to the recommendation (No. 7) in respect of government grants-in-aid. The system of grants-in-aid from governmental sources not only stimulates local bodies to improve their services but gives public health departments a measure of control and supervision which the report shows to be urgently necessary. Without these grants the only pressure which can be brought to bear upon local authorities is that of persuasion and it is within my own knowledge that lack of skilled guidance has frequently resulted in much waste of money and effort. I can imagine no more useful or advantageous method of ensuring the correct development of this public health activity than by grants-in-aid made on the condition that certain standards are maintained. Although I have confined my remarks to these four or five recommendations, I trust that it will not be assumed that the remaining 48 are of little consequence, I very much hope that the report will be studied as a whole and that all the recommendations made by the Committee will receive serious consideration. Other members of the Board may perhaps think that recommendations of great importance have been omitted, but I have dealt only with those which seemed to me to be fundamental if the structure of welfare work is to be built on solid foundations. Once the foundations are well and truly laid, the other recommendations can be taken up and fitted into the new structure.

I trust that this Special Report will be found of use to all who are interested in maternity and child welfare work in this country, and that it may adequately fulfil the functions which it was intended to perform.

The Hon'ble Dr. T. S. S. Rajan : We have done something in this province on the lines suggested in the report. We have an Assistant Director of Public Health whose entire duty is to be in charge of child and maternity welfare. We have under the Director of Public Health one Assistant Director of Public Health, 37 women medical officers, 35 medical women for domiciled midwifery and 436 midwives, assistant midwives and nurse dais, and 197 maternity and child welfare centres. We have also taken over the duty of training health visitors from the Red Cross Society. We have a training class for 10 health visitors who are paid stipends until they finish their training. With regard to the financial aspect of the question, the local Government have not found it possible to extend their activities in a great measure. What we have done is to finance the child welfare and maternity schemes by 1|4th grant. But I must say this ; that our local bodies have certainly responded to the call of the Provincial Government. They have earmarked more than they have done in previous years. The allotments made have risen from Rs. 1,25,751 in 1931 to Rs. 2,40,961 in 1937. Apart from these child welfare centres, the Madras Corporation have done extensive work in the maternity and child welfare schemes including prenatal and postnatal work by having home visitors whereby advice on health matters would be available to the mother in her home and

also by inspecting school children and by giving lantern lectures. We have in almost all the big municipalities health centres. We have certainly more than one centre in many cases, and we have extended this kind of work to villages under the panchayat boards. There is this particular difficulty with regard to maternity and child welfare work, *viz.*, that our people are not able to distinguish or differentiate antenatal work from actual maternity work. They only want people under labour to be attended to. It is very hard to convince people that a certain amount of antenatal work is essential and that it will give great improvement to the suffering mother. Even some of the medical men have no belief in this, but I think such ideas are fast dying out. We have now instituted antenatal lectures and all our medical students attend such lectures, and the importance of antenatal and child welfare work has been brought home to them by our hospital instructors. So far as we are concerned, I am glad to report that the Director of Public Health has been able to persuade almost all the local bodies to give more grants to maternity and child welfare centres. Besides, we have got what are called Health Associations in parts of our province. We have got also what are called District Health Associations having more than one branch. These are non-official bodies but one or two officials are also associated with them. They are run mostly by non-officials. They cannot be run by non-officials alone for the simple reason that a medical officer is essential on that body. These bodies are purely voluntary organisations and they are doing fairly good work. In my own place, Trichinopoly, we have got an enthusiastic President who has been conducting this institution for many years. He has got influence, is getting help from the public and is running the Association successfully and that Association is now trying to extend its activities to the interior of the district also. Such work has been encouraged by Government and through different agencies. Over and above this, we are carrying on educative propaganda through the Health Board which some believe to be of little good. I personally believe that we are doing good work by such propaganda. On a modest computation, as many as 30 to 40 lakhs of people have benefited by this propaganda as will be observed from the census that I took when introducing the Public Health Bill. I have found that the attendance has amounted to something like three crores of people. I mention these facts to show that in spite of the popular education that we have been trying to give, we do find some difficulty in convincing the people about the importance of antenatal work. Health work is done by house to house visits by the health staff and every health visitor has to make a number of visits which are recorded in their registers. In spite of these things, we are not able to carry relief work to the villages. That is rather dfficult. I for one feel that our work is absolutely useless if we do not tackle this problem in the villages. I am very anxious to have the opinion of the Conference and if they could help us in developing this idea and in doing something so that we may carry home to the minds of the villagers a knowledge of the importance of child welfare and maternity work, it would be very welcome. Of course I do admit that our people are very conservative. But from the way in which our midwives have been able to carry on their work, I do not think they are such a bad lot of people. It all depends upon the way in which

you approach them. If we think they are quite ignorant and they do not deserve anything then there will be no good result. We must approach them with sympathy. From my experience I may say that our people are as good as anybody in the world. We have to-day in our province rural medical dispensaries to the tune of 520 and over. We have made it a principle that, as far as our province is concerned, every rural medical dispensary should be provided with a midwife. We have done this in the majority of rural dispensaries and the few that have not been provided will be provided very soon. The work of midwives consists not only in attending to maternity and child welfare but also in doing a certain amount of work in connection with visiting and in giving such knowledge as may be useful to the people.

That is what we have done so far. The difficulty of working the scheme is more in villages than in towns. One other difficulty we are having, unlike Bombay, is that we have not got so many maternity homes. There they have a number of maternity homes not only for the labourers but for higher class people and so on. So I have suggested to the Madras Corporation to have such homes in a number of divisions. We have got terrible congestion in our maternity hospitals. Although we have got three maternity hospitals we find that every one of them is overcrowded to five or six times their capacity. That generally people are taking themselves to maternity hospitals is very clear, but the difficulty of accommodating all of them is very great.

We are only concerned with the poorer class of people. Mortality among the poorer class of people is very great. So far as the poorer classes are concerned, they go easily to these hospitals and I have therefore instructed the Madras Corporation to have such homes on the lines of Bombay. We want to run a few more maternity homes in the city of Madras. In this connection, I would like to place before the Board some practical ideas as to how this scheme should be extended into rural areas. It is only by having more health centres in rural areas that we can spread knowledge about child welfare and maternity work among rural folk. The real business of this Conference is how to tackle the problem of child welfare and maternity, and if we go beyond that, it would be very difficult for us to tackle it. For child welfare and maternity it is absolutely essential that we should have a sound economic condition of the people. That is a very big question and is not within the purview of this Conference. The health worker is there and she is trying to face the problem of public health and child welfare as far as she can. But what is essential for the furtherance of a child welfare scheme is a little more nourishment and better feeding of children, and cow's milk for this purpose will be a great inducement to the people to bring all their children. I really do not know whether this question is really so much of a public health question. I have placed before this Conference the idea of providing, by some means or other, either through philanthropic help or through Government help, a certain amount of good milk for the children in the interests of maintaining public health. If some such scheme should be worked, it will go a long way to popularise the welfare centres, particularly in villages. I would like to place before this Board the suggestion that it might frame a resolution on these lines for communication to all Provincial Governments.

Rani Sahiba Phul Kumari : Is it a fact that women in rural areas are not willing to take advantage of these child welfare and maternity centres ?

The Hon'ble Dr. T. S. S. Rajan : It is not a question of their unwillingness. The difficulty is that we have not got sufficient staff to attend to this work. We must have a sufficient number of health centres in groups of villages. There should be midwives and there should be particular places to receive these children. We must have more staff. The Madras province cannot possibly undertake the financing of big schemes, but certainly we can consider such small schemes as making contributions for the supply of milk and so forth. We could also consider other schemes that may be suggested by the Conference. If that is not possible, further development on the lines I have suggested should be undertaken in view of what we have experienced in this province.

The Hon'ble Mr. Tamizuddin Khan : We have proceeded more or less on the lines of the recommendations of this Board, but we have not been able to give effect to our schemes fully. Recently a conference of district boards was held in Bengal and all these schemes were discussed. According to one of the schemes, it was proposed that the local bodies should also bear their share of expenditure in the matter of child welfare and maternity, but we have not yet been able to come to any decision on the point and the matter is still under consideration. We shall pay half the capital cost and also the total expenditure necessary for the appointment of the necessary staff. The rest will have to be borne by the local board or the district board or the municipality. That is the scheme which is still under the consideration of the Government. The scheme that we have evolved appears to be more or less commensurate with the recommendations of this Conference. I think the Director of Public Health will be able to explain the scheme.

Lieut.-Col. A. C. Chatterji : We have had under consideration several schemes for the establishment of child welfare and maternity centres with and without maternity homes. If more money is available we can have more training centres. The dais, although they are trained, have got very little practical experience even for attending normal labour.

In reply to a question by Pandit Lakshmi Kanta Maitra Lt.-Col. Chatterji continued : Dais are attached to some of the hospitals. The real trouble comes in with regard to rural midwives. We are concentrating our attention on the training of dais for this purpose. In the absence of a properly trained staff, the visits made by the health visitors or a maternity home without trained staff will not work satisfactorily. If possible a lady doctor from a neighbouring district headquarters or a town may be made to visit such maternity centres. We are trying to begin with the district headquarters and then gradually go to town and sub-divisional headquarters. At present the work is practically entirely supported by the Red Cross organisation. Local bodies and the Red Cross get certain grants from Government. Three or four bodies unite together and carry on this work. We are trying to induce the local bodies to take more interest in the

matter. All that we do at present is that we give grants to district boards and they organise training centres. We have also established a Health Visitors' Training School in Calcutta which is largely financed by Government and which is under the direct supervision of the Red Cross Society.

Colonel G. Jolly : My Minister has asked me to apologise for his absence. The difficulty in regard to recommendation No. 1 of the Report is that the Punjab Government are unable to commit themselves to it in its present particularised form. They are entirely in sympathy with the object of associating highly qualified women doctors with child welfare work. In the Punjab we have with the Director of Public Health a highly qualified lady doctor in charge of the child welfare centres. We have also under the Inspector General of Civil Hospitals a senior lady doctor of the Women's Medical Service. The Punjab feels that it may be possible to utilise these two ladies in close cooperation to form an effective central directing organisation.

Recommendation No. 11 of the Report is the key recommendation, as it stresses the importance of cooperation between the medical and the public health departments. The Punjab Government feel that this cooperation between the two departments is essential. Col. Nicol will tell the meeting about the very considerable amount of maternity and child welfare work that has been done in the Punjab. We are associating all women medical officers with these child welfare centres. Instructions have been issued that wherever there is a hospital and a child welfare clinic, the lady doctor at the hospital,—it is the Punjab Government's policy steadily to equip all headquarters hospitals with lady doctors, proceeding from above downwards,—is associated with the child welfare centre for that part of the work. This cooperation if well worked out and the utilisation of the personnel available will help the child welfare work considerably. A more general resolution, therefore, not one so highly particularised, would be acceptable to the Punjab Government.

Lieut.-Col. C. M. Nicol : I might mention one important point. The Punjab Government are considering the question of provincialisation of the service of health visitors. That will place their work on a more secure and permanent basis. The Punjab Health School is a provincial organisation paid for by the Provincial Government. The whole service would have been provincialised long ago if finance had not prevented us from doing so.

With regard to the association of women doctors with the work of welfare centres, I entirely agree with Col. Jolly's remarks. The public health department has already at three centres wholetime women doctors giving particular attention to prenatal and postnatal care of mothers.

In reply to Pandit L. K. Maitra, Col. Nicol continued : They had 91 centres in the Punjab.

The Hon'ble Mr. B. Dube : In Orissa we have got 30 child welfare centres and Government gives grants to them. The local bodies contribute towards the pay of the doctors in three of the centres. We are training dais in three centres. We have also passed an Act called the Registration of Nurses and Midwives Act. I agree with Dr.

Rajan as to the necessity of extending this work to rural areas. In certain places, we are also supplying free milk to needy people. The high rate of maternal mortality is due to the fact that there are no trained dais and in order to remedy the defect we have passed the Nurses and Midwives Registration Act and we are also opening centres in different places for the training of midwives and dais. The real difficulty is want of funds and if the Central Government would give us grants we will proceed on a more satisfactory basis.

The Hon'ble Dr. M. D. D. Gilder : I am at a disadvantage in following Dr. Rajan, because on the Bombay side medical matters, particularly the branch of preventive medicine, are treated more as a step-daughter. There we have a field-marshal with four or five generals, in the Director and Assistant Directors of Public Health, but we have no army : we have no real preventive service. On the other hand, we have a good many voluntary organisations for maternity and child welfare work owing to the efforts, for instance, of Sir Mangaldas Mehta and Mr. Wadia in Bombay city. Consequently about 73 to 74 per cent. of confinements in Bombay city are conducted in institutions and we have about 12 child welfare centres in the city.

Coming to the rural areas, we started late and we have only 35 welfare centres. We have also got two schools for health visitors. At the present moment, all child welfare work is either entirely on a voluntary basis or is partly supported by Government grants. As far as women doctors are concerned, there is no difficulty in finding them in urban areas and they are associated with the work. Our difficulty is with regard to rural areas. We are following the footsteps of Madras in adopting a system of subsidised doctors. We have appointed about 200 doctors and we hope to appoint about 250 more next year. Along with these subsidised doctors we hope to appoint qualified midwives also. Seventysix midwives have been appointed this year and during the next year we hope to appoint more as soon as more qualified women become available.

With regard to the question of appointing a woman doctor to the position of Assistant Director of Public Health, I, particularly as one who has married a woman doctor, can say nothing against it. But for the present in Bombay, until we develop an army of preventive workers, it would only be adding another general without having an army. We are trying to develop the service on a semi-voluntary basis by giving grants from Government and by having a certain amount of Government supervision in certain cases.

As regards the other suggestion about prenatal and postnatal clinics, certainly, as far as the medical colleges are concerned, they have been developed to a considerable extent. Preventive teaching is given there not only to medical students but also to midwives. As regards the separation of preventive and curative aspects of the work at the child welfare centres, this has been done in urban areas but in the rural areas it is not easy to separate the two aspects.

As regards research work in maternal mortality and morbidity, we are doing it in Bombay city but here again our difficulty is with regard to rural areas. In Bombay city, we have got two doctors engaged on this work, I think, with a grant from the Indian Research

Fund Association. We find that maternal mortality in Bombay city is 8.8 per cent.

As far as child welfare and maternity work is concerned, we are developing on the lines of voluntary institutions to which the Government is prepared to give grants. The difficulty, as Dr. Rajan pointed out, is to get the people to bring their children to the centres. That difficulty is overcome by the provision of milk or some other temptation like that. In Bombay city also this is being done. The Bombay Municipality has gone further and has undertaken the supply of milk to school children. That is all I have got to say about these recommendations. I would accept them with one modification, namely, that it is no good adding a general without having an army.

The Hon'ble Srijut Ramnath Das : I have not much to say as regards this question, because we are yet in an infant stage. We have got only a few centres which are maintained by the Red Cross Society. We contemplate giving help to a few more centres to be opened by the Red Cross Society and also to open a few centres in certain hospitals. We have not been able to do much for want of funds.

Mr. V K. R Menon : You will find that our work has been summarised in the report. I agree that all the work that is being done is done in cities and at the headquarters of districts. We want to do something practical next year. We feel that the most essential thing is the training of dais. Some time back we tried the system of the Government giving 1|3 grant and the local bodies giving the remaining 2|3 but that failed, partly because the Victoria Memorial Scholarships pay the whole cost of the training. We propose to revive the system next year by asking the Victoria Memorial Scholarships Committee also to restrict the grant to one-third, so that the local bodies may be made to take an interest in the matter. Until that is done, the system will not develop. As regards other matters, our Government will consider them.

Rai Bahadur Dr K. P Mathur : The maternity and child welfare work in the United Provinces is entirely done through the Red Cross. We have a lady doctor in charge who gets a pay of Rs. 500—750. We have 330 centres in the province. In the districts the work is done through the agency of hospitals. We have only 23 health visitors and they practically all work in the cities. We do not get the right type of woman. The Government is thinking of opening a health school from next year where we expect to train midwives and health visitors.

I want to say a few words in connection with the Report. On pages 17-18 of the Report the suggestion is made that the practice in the U. P. of handing over the whole of the Government grant-in-aid for maternity and child welfare to the U. P. Branch of the Indian Red Cross Society is no longer necessary. I wish to inform the Board that experience of the past has shown this to be the best way of avoiding duplication that would inevitably ensue by the Red Cross having to continue this work according to their peacetime programme. The present method also ensures the pooling of all local and non-official opinion and financial support which it would be difficult to secure in a purely Government organisation. The Red Cross does not make any

distinction between any religious or political organisations and its aim is to develop non-official support. Although Government does not also make any distinction, it is easier to obtain local cooperation in a non-official organisation of this kind. The executive committee of the U. P. Branch of the Indian Red Cross consists of high Government officers as well as prominent non-officials and there is complete unanimity of opinion between them as to the policy to be pursued. The Director of Public Health is the vice-chairman and the wife of the Governor is the chairman of the maternity and child welfare committee.

I find that on page 39 of the Report, concerning maternity services, specific mention is made of the separation of the posts of woman medical assistant to the Inspector General of Civil Hospitals and the Director of Maternity and Child Welfare. I wish to inform the Board that this arrangement has not caused any difficulty in co-ordination between the domiciliary midwifery service and the institutional service aimed at in Dufferin Hospitals. The maternity and child welfare centres in the United Provinces are not required to deal with any abnormal cases, but send them to the Dufferin hospitals. In view of the large amount of touring and administrative work entailed in both posts, it was found impossible to entrust the charge of both organisations to a single officer. It will be much more difficult to make such an arrangement with the expansion of rural maternity services I think that for provinces of the size of the United Provinces, there is no harm in having separate women officers for the two kinds of work.

Rani Sahiba Phul Kumari : I would like to say that very little work is done in the rural areas where great necessity exists for it. In the big cities there are hospitals and child welfare centres but in rural areas there are none. At least a few rural centres should be started in each province. The district boards should pay one half and the other half should be paid either by the Government or the Rural Development Board. In rural areas it is very difficult to get the help of a lady doctor and even when one is available the fee asked is high and beyond the capacity of the poor. I would request you to consider the necessity for the opening of welfare centres in rural areas. Health visitors and lady doctors should advise the people of the value of such centres.

Pandit Lakshmi Kanta Maitra : It is all very well to say in the report that a lot of things are being done, but I am drawing attention to the actualities of the situation. As a layman I cannot go into the merits of the individual recommendations, but from the several speeches we have had from the Provincial Ministers it appears that they have realised the importance of this subject. Particularly, I believe that the Madras Presidency is far ahead of other provinces in this direction.

So far as the Government of India is concerned, they have a direct responsibility for the centrally administered areas and I do not know how this responsibility has been discharged.

The recommendations, so far as they go, are really commendable, and I believe if the Government of India started a training centre—a model institution—in Delhi, then the neighbouring provinces, the Punjab, the United Provinces, the Frontier, and others which want to

avail themselves of that institution, might send their candidates there for training.

If my friends from the Provincial Governments have no objection to the report being accepted *in toto*, I myself can have no objection to doing the same.

The Chairman : I wish to point out that the Hon'ble Dr. Rajan in his introductory remarks asked the members of the Board to pay attention to the suggestion he made that the question of the supply of milk at the health centres might be considered, as one of the means of popularising them. I think in the subsequent discussions that have taken place, Dr. Gilder said that in Bombay they have even gone further and have given milk to school children. This is an important suggestion. I hope that subsequent speakers will give their views, as this is a point which requires further investigation.

Another point which I as one coming from the United Provinces, may refer to is this : Is there any difficulty in getting women to settle in rural areas ? In the United Provinces, I think we cannot get even men to go to the villages and live there, because the mode of life in the villages is so alien to their upbringing. There was a scheme at one time to subsidise rural doctors, but I do not know whether that has been successful. And as one who can claim to have had some connection with rural areas, I must say that I have not found any doctors actually settling down in the villages or even in small rural towns. As regards women doctors, naturally, their mode of life is different, and they find it increasingly difficult to settle in rural areas. I suppose in Madras no such difficulty is felt.

The Hon'ble Dr. T. S. S. Rajan : Whatever initial difficulty there was in Madras, the rural medical scheme has proved a perfect success. What is more, there is such severe competition for this kind of service that people readily accept Rs. 50 a month ; in other words, for Rs. 600 a year, we can get any number of people including University graduates to go and settle in the villages. Many of them are earning much more than the subsidy we are giving them. That is the present position.

Rai Bahadur Dr. K. P. Mathur : In respect of the U. P. even men were not readily willing to go and settle in rural areas, and, naturally, there was much more difficulty in obtaining women.

Colonel G. Jolly : There is difficulty in the Punjab in getting women to go to outlying villages ; and unmarried women never do so. As a result all our present women health visitors are married. One of the reasons for the proposal to provincialise the whole of the cadre of health visitors was the difficulty of getting women to go to outlying places. At present, women are appointed as health visitors by local bodies and difficulty is felt in inducing them to work in certain rural areas. If provincialisation were effected, there is every chance of getting rid of this difficulty and of getting an increased number of applicants.

Lieut.-Col. A. C. Chatterji : Might I supplement what has been said as regards the Punjab ? Our difficulty is to secure, not women doctors alone, but even men doctors for rural areas. We have been

experimenting with a subsidised system for a year or two, and have secured only nine so far ; but Government are considering an expansion of the subsidy scheme, because they feel that this is the only solution.

Dr. Hyder Ali Khan : Wė are contemplating the employment of a woman assistant director for maternity and child welfare work. As regards maternity welfare, at present such work is being undertaken by municipalities in urban areas and by local bodies in the rural areas. The Government do not at present give much assistance but the work is done under the guidance of the Government and the public health officers often go and inspect the welfare centres. We have also got a few women doctors who inspect these centres. We train midwives in the Zenana Hospital, where we have a large number of cases. As regards rural areas, the midwives in rural areas have been instructed to train as many women as possible It is difficult of course to get a sufficient number of dais ; but we are trying to supply them to all villages. Maternity welfare forms part of rural uplift, that is to say, in each rural uplift committee a health officer looks after maternity welfare matters. We have not at present got a school for health visitors. In some centres we supply milk to the children. It is difficult to get doctors to go and live in the rural areas.

Dr. P. Parthasarathy : In the Mysore State, maternity service can be divided into urban and rural. In urban areas, we have nearly 31 institutions dealing with nearly 10,000 cases. In addition, domiciliary midwifery service is provided by local bodies. In rural areas, domiciliary midwives have been posted to dispensaries which number about 300. As regards maternity and child welfare work, the supervising and organising part was in the hands of the public health department until recently, when it was found that for want of a sufficient number of officers. it was necessary to hand over control to the medical department The medical department have women doctors under their own control as well as men doctors Maternity and child welfare work is being done more on a voluntary basis, with a semi-voluntary organisation, *i.e.*, the Red Cross Society branch of Mysore, to control the activities. The funds of the Red Cross Society include a grant from the Central Red Cross Society and subscriptions from local bodies and village panchayats, each village panchayat subscribing Re. 1. One of the chief functions of the Red Cross Society is to establish maternity homes by giving grants to local bodies or village panchayats. So far, about sixty maternity homes have been established in the State. As the health department develops, it is the intention of the Government to hand the work back again to that department. A scheme has been worked out on the basis of providing a domiciliary midwifery service with about 5,000 midwives, so that each midwife may attend about 200 births a year. The total estimate on this basis is Rs. 8 lakhs. It has been suggested that this amount could be found by pooling the resources of Government, local bodies and of village panchayats. As regards child welfare centres, these are also voluntary institutions at present except in rural areas. A private endowment called the Gunamba Trust provides money for these welfare centres.

There are seven such centres in the State which, in addition to child welfare work, attend also to domiciliary midwifery work and milk is supplied to deserving children. Maternity and child welfare work

has already begun to develop in Mysore, and I hope with the recommendations of the special committee before us, the time taken to develop a full-fledged maternity and child welfare organisation will be shortened.

Dr. E. W. Hayward : What applies to other provinces naturally applies to Jodhpur also, but the main difficulty is to obtain doctors and midwives in sufficient numbers.

Colonel J. A. Manifold : So far as welfare work in the army is concerned, there has been a great improvement during the last five years. In the year 1937, we treated 75,194 children.

I should like to refer to the draft resolution which says : " The urgent necessity for further research into the causes of maternal mortality and morbidity and of infantile mortality, etc.". Are we not, by this resolution, shutting out the practical side ? Would it not be better to put in a resolution stating that better arrangements should be made for treatment, before we think of going into the causes of maternal mortality, etc. ?

Dr. H. R. Rishworth : I have prepared a short report on railway activities in regard to maternity and child welfare work copies of which have been distributed.

We on the railways are primarily concerned with problems of freight and passenger traffic run on business lines, and it must be recognised that welfare activities are not a legitimate charge on railway revenues. Nevertheless, during the past five years, we have done a great deal by voluntary effort and on some of the railways we have model organisations. Some figures may be of interest to you in regard to milk distribution. We give milk free only to necessitous cases. The actual cost on one of the railways for milk amounted to half an anna per week per house.

One of our railways has run a welfare organisation from 1933, and the centres have been responsible for 3 368 cases with a maternal mortality rate of only 1.78 per thousand.

As regards welfare centres degenerating into dispensaries, I would like to warn the Board that this has also been our experience.

The railways have done a good deal of work in the training of dais. Two annas are paid to those who attend the lectures, and at the end of sixty lectures they are supplied with the necessary materials for their work. This system has been highly developed in the Punjab ; and we are developing it in the Central Provinces, the United Provinces as well as in the area covered by the B. B. & C. I. Railway.

No certificates are issued ; the dais are given a small instrument box. Over a period of four years, the number of antenatal cases treated totals 23,000 and the number of infants 1,33,813.

Major General E. W. C. Bradfield : I must say a few words in reply to the statements made by the representative for the Army. First, he referred to the preventive aspects of this work. He will find his answer at page 58 of the report, where it is stated that : " Great care, however, must be taken lest the welfare work, which is primarily preventive in nature, develops mainly a curative character. The centre which usurps the function of the hospital or dispensary does so

to the detriment of its own more fundamental work of promoting racial health and preventing disease, and also puts back the time when adequate medical facilities will be instituted.''.

The second statement was that there was no need for further research. That is a policy which the medical profession cannot take up. We all realise that more and more research is required on these matters, because we do not know enough about the causes of maternal and infantile diseases, and we must encourage these centres and institutions to carry out proper investigations.

In regard to the rest of the report, a few things perhaps closely touch the medical side and I would like to draw attention particularly to recommendations 6 and 33, which deal with the need for coordination between the nurses and midwives' councils in the various provinces. The time has not yet come for a central board to regulate the training and classification of nurses. Nursing councils should endeavour to keep more and more in touch with each other, for the maintenance of common standards.

Another important recommendation is No. 11 which refers to coordination between medical and public health departments. Unless proper cooperation and coordination exist between the public health and medical departments, little or no advance will be made. The necessity for adequate training both for nurses and medical students has also been correctly stressed.

A further point, to which I would draw attention, is the springing up all over the country of private nursing homes. My experience of these homes in one province is that while many are good others are only fifth rate nursing homes. The only way to control them is by a system of licensing and by proper inspection at frequent intervals.

At this stage the Hon'ble the Prime Minister of Madras paid a visit to the meeting and was introduced by the Chairman to the members of the Board.

Colonel J. A. Manifold : I am the last person in the world to deprecate research. For the last 20 years I have been concerned in promoting research and in carrying it out myself. I did not deprecate research ; what I said was, that we now know the diseases from which the children die and I have got death rates showing that so many died of malaria so many of dysentery and so on. We know the causes of these diseases and the measures necessary to prevent them. Only by finding out such cases and treating them suitably can we prevent their spread.

Colonel A. J. H. Russell : I would like to stress the importance of research in the maternity field. The Indian Research Fund Association has had two or three enquiries during the last few years, and the recommendations in the Maternity and Child Welfare report are based on the knowledge we have gained, which shows that the causes of maternal disease and morbidity vary tremendously from one part of India to another. It is impossible to plan schemes for the prevention of maternal diseases if you do not know the causes. Knowledge collected in one area might not be applicable to conditions in another area.

Mr. Maitra has asked what the Central Government is doing in the centrally administered areas. We have the Lady Reading Health

School in Delhi, which trains each year from twelve to twentyfour health visitors ; and these women have had no difficulty in obtaining appointments, not only in the centrally administered areas, but in the provinces as well. Some of the women have come from Travancore, Cochin and as far as Kashmir. The School, which has been in existence since Lord Reading's Viceroyalty, has in my opinion done very valuable work, and will no doubt do so in future, as the course has recently been extended to eighteen months. We have also got a good maternity and child welfare organisation for the province of Delhi and also in Ajmer-Merwara.

The next point is one which was mentioned by Dr. Mathur. This will be found at pages 17 and 18 of the report, which reads as follows :—

> "It would seem to be open to argument whether the policy of delegating to a voluntary society, the provincial organisation of maternity and child welfare and the administration of Government grants-in-aid should be continued".

There is no criticism there ; at least, if there is one, it is very mild. Government is hardly justified in maintaining a public health department on one side and handing over the money and organisation for running maternity and child welfare work to another body. In my opinion, by this method, Government is not obtaining the necessary coordination between its medical and public health department

In regard to the free distribution of milk, this has always been a burning question in connection with child welfare work. At different times it has been practised in England, and in Madras City also. I do not think it was as effective as has been suggested. No doubt a large number of children came for milk, but the practice can easily be abused.

As a result of the above discussion, the following resolutions were unanimously adopted by the Board :—

The Central Advisory Board of Health, in adopting the report of the Special Committee on Maternity and Child Welfare work in India, expresses its thanks to the Committee for the able manner in which it has carried out its task

In recommending the report to all Provincial and State Governments for their detailed consideration, the Board desires to invite special attention to the following recommendations which it considers fundamental to the development of sound maternity and child welfare schemes in this country :—

(1) The appointment in each Province or State. of a senior woman medical officer having special qualifications and experience in maternity and child welfare work.

(2) The appointment of specially trained women doctors to take charge of maternity and child welfare schemes in municipal and local board areas and to conduct the prenatal and postnatal clinics in the welfare centres.

(3) The provision of greater facilities for the training of medical students and midwives in prenatal and postnatal work.

This implies the provision of well-organised prenatal and postnatal clinics in all teaching hospitals.

(4) The preventive aspect of maternity and child welfare centres is primary and it is most important that this be kept always in mind. These centres should not assume the functions of a hospital or dispensary. It is recognised that the corollary to this recommendation is the provision of greater numbers of rural dispensaries and of rural medical officers.

(5) The urgent necessity for further research into the causes of maternal mortality and morbidity. To this end, public health departments and particularly their maternity and child welfare staffs should help by carrying out investigations into these subjects.

(6) Well-organised maternity and child welfare schemes should be eligible for Government grants-in-aid, as these not only stimulate local bodies to improve their services but give public health departments a measure of control and supervision which the report shows to be urgently necessary.

ITEM III—INDIAN VITAL STATISTICS.

The Chairman asked the Secretary to open the discussion.

Colonel A. J. H. Russell : Although in certain provinces and States in India considerable improvements have been made during recent years, the subject has by no means received sufficient attention either from public health departments or from others concerned with the subject. As the memorandum states, the Royal Commissions on Agriculture and on Labour had no doubt as to the importance of improving these vital records, whilst the same question was the subject of a resolution at the Rural Hygiene Conference held in 1937 in Java.

I do not propose here to refer to the various methods or lack of methods through which errors multiply before the final records become available to the public and to Government departments. These are set out in sufficient detail in the early pages of the memorandum. Our immediate concern is rather with practical suggestions for the improvement of these statistics. You will find on pages 6—14 of the memorandum a number of different proposals which in my opinion are easily susceptible of adoption and which taken together should result in much greater accuracy of the vital statistics of this country I do not suggest that these suggestions exhaust the possibilities ; indeed, I hope that the discussion will indicate other methods of improving the present position.

One or two points in the memorandum, however require to be stressed. In the first place, if every health officer would only give more time and attention to the supervision of registrars' work, to inspection of their birth and death registers and to the detection of omissions, these records would quickly give not only a much more correct picture of health conditions in general but also would provide every health officer with valuable epidemiological information. Even in rural areas, the health officer can do a great deal in this direction, as I know from my own experience in Madras Presidency. It will be noted, however,

that this improvement depends on the employment of a sufficient number of trained health officers both in municipal and local board areas and most of us are aware of the lamentable deficiencies in this respect, which still exist in many parts of India.

In regard to the compilation of vital statistics, I believe that the method now in force in Madras Presidency is one which is not only logical and less expensive but is productive of much greater accuracy. I myself have no doubt as to the improvements which have resulted from compilation in the office of the Director of Public Health and I hope that it may be possible for other provinces and States to adopt this plan

The efforts towards improvement which can be made by public health departments will, however, continue to be greatly handicapped so long as compulsory registration of births and deaths is not in force. You may have noticed that this question of compulsory registration is the subject of a recommendation in the report on Maternity and Child Welfare work in India which we have already discussed. There does not seem to be any reason why compulsory registration should not now be extended to every part of the country. Numbers of municipalities and local boards already possess full powers in this matter, but in many instances they have failed to frame and put into force the necessary bye-laws. This is a subject on which perhaps the Board will agree to express an opinion Compulsory registration would not only go far to improve vital statistical records but would assist in the improvement of vaccination and in the development of maternity and child welfare work.

The suggestion has been made on pages 12 and 13 of the memorandum to include two new items in the birth registers, *viz.*, the age of the mother and the number of the pregnancy I do not propose to repeat the arguments given in favour of these innovations, but I do hope that it may be possible for some public health departments at least to carry out the investigation outlined in paragraph 23. Adoption of the second suggestion would also give us valuable information in connection with the subjects of maternal and infant morbidity and mortality on which future activities might be based.

Finally, a reference has been made to the desirability of providing at the headquarters of each public health department a separate section in charge of vital statistics, or if you like, a bureau of vital statistics. The provinces and States which have already organised their departments in this manner are in a much better position to ensure the accuracy of vital statistics and the analysis of these figures in respect of different public health problems. In fact, it is not easy to understand how Directors of Public Health responsible for giving advice to their Government can possibly give that advice without the information provided by analyses of their records by a trained statistical staff

It will be understood that all these remarks equally refer to provinces and to States. It is most desirable not only from the inter-provincial and inter-State point of view, but also from the international aspect that the Public Health Commissioner should have as accurate figures as possible from every part of India As the memorandum states, considerable improvements have been effected during the last two or three years, but much remains to be done in the collection, compilation and analysis of the States vital statistical records.

I hope that the discussion on this important subject will not only indicate additional lines on which improvements can be effected but will be of assistance to all medical and public health administrative officers present. The question, I would repeat, is of first importance and I hope the Central Advisory Board will find it possible to lend its weight to the opinions and suggestions set out in the memorandum. If improvements can be effected, the results ought to be far-reaching and of great value to the people of this country.

The Hon'ble Dr. T. S. S. Rajan : We have the rich legacy left by Colonel Russell here. In Madras, the collection of vital statistics is being done more or less under his inspiration. We are grateful to him for the lines he has laid down for our fulfilment. All the same I regret to say that our statistics cannot yet be said to be quite complete. Vital statistics are an interesting matter for speculation and I have always been amused at the tremendously different conclusions that have been drawn by different persons from vital statistics. Conclusions differ with the individuals and with their temperaments. I have in mind the statistics that have been placed before u with regard to vaccination. Under the Health Bill, which we have introduced in the Legislature, we have made vaccination compulsory. Against this, the heaps of statistics collected by the Government health department are being put forward by anti-vaccination leagues. The same statistics relied upon by Government in favour of their measure are being quoted by these leagues and others for condemning vaccination.

When I was in England as a student, I was amused to see Dr. Haddow using against the Government statistics furnished by the Government itself. I agree that we must have correct figures of vital statistics not only from the health point of view, but also from the point of view of population growth. Correct figures will be useful since we are told that in this decade births are expected to exceed deaths by as much as 40,000,000. This is a question in which all Governments are interested. The Director of Public Health of our province claims that the centralisation of vital statistics in his office has improved the records very much in regard to accuracy. An Assistant Director looks after this department exclusively and he has given us fairly very good results. We have been able to enforce the Registration of Births and Deaths Act in all municipalities and major unions. In all places where there is something like a health staff working, we have got fairly correct statistics. Out of a total of 34,418 villages, in 13,658 or 39.6 per cent., this Act is in force and correct records are therefore kept. On the population basis, 23 millions of the total population of 41 millions have been brought under this Act. We are, as far as possible, roping in more villages under the compulsory registration scheme. Village officers are under an obligation to record these events and revenue officers are empowered to enquire into cases of neglect. Recently, tahsildars requested that they might be relieved of this work. We are now therefore taking steps to empower the deputy tahsildars to take charge. We are also giving health officers, sanitary workers and rural workers under the permanent employ of the Government, a month's training course in vital statistics under the district health officers. With the object of ensuring accuracy in village figures, we have authorised revenue officers to make the inspection of vital statistics part of their tour duties. We have also asked the health inspectors to check their records and returns with the records kept by the village

officers. The records of these village officers are even subject to inspection by the health inspectors and once in a way by the Assistant Director of Public Health. Thus, with regard to vital statistics in municipalities and major unions, we may claim to have fairly accurate records. With the introduction of compulsory registration in the remaining villages, I am sure that we will be able to obtain as accurate records as possible. We have found a short training of one month in the actual working of the system to be enough.

As regards returns for epidemics of cholera and so on, we have both fortnightly and weekly returns. But these records come in sometimes a fortnight after the actual outbreak of an epidemic. It is unfortunate that machinery does not exist for more expeditious reporting, because for any preventive work to be of any value, information should reach us quickly and measures must be taken promptly after an outbreak. We have for this reason decided that we shall not in future run after epidemics. We believe that the effective way to tackle epidemics is to forestall them. What we want is a forecast of possible epidemics at particular centres. In fact, we publish quarterly forecasts of epidemics, so that people who are going to fairs or festivals may be forewarned about the possibility of an epidemic. We also advise them to protect themselves by publishing information in the press and by means of handbills. I personally believe that forestalling these epidemics which occur more or less in cycles in certain areas is the best way of combating them. Last year, we had large congregations of people in three centres for the Ardhodayam festival in Rameswaram and in Mahabalipuram and also in Rajahmundry. These *melas* occur at long intervals of 5 to 10 or 12 years, but last year we claim that we so arranged our health work in anticipation that these festivals passed off without a single epidemic outbreak. That indicates the possibility of controlling epidemics in a scientific way and of ensuring perfect safety to our people. I want to bring this point particularly to the attention of the Board. The Board should consider whether it is not worth while having a forecast map for the whole country containing particulars of the various fairs and festivals held in one season or another. If such a map could be prepared, the health department could be put in possession of the facts and information could be given to the people by broadcasts and so on. That is a suggestion which I would like to put forward.

If the registration of vital statistics could be further expedited with the existing legal provisions and with the machinery at our disposal, I would certainly welcome that step. But I do not see any further possibility of hastening this work beyond what is being done with the help of the law. Personally I do not believe this can be done with the help of honorary workers. They will be sufficiently enthusiastic for a week and then they will offer excuses. Progress will have to be made by payment and under compulsion of law.

The Hon'ble Dr. M. D. D. Gilder : There is no doubt about the importance of the collection of vital statistics. The only point on which there is difference of opinion is the question of finance involved in any speedier method of collection. Certainly, in public health matters, Madras is far in advance of the other provinces. In our province there is no separate organisation for the collection of statistics. An Assistant Director of Public Health with the help of the Collectors collects these

statistics, co-relates them and sends them to the Director of Public Health. If we transfer that work to the Director of Public Health, I am afraid we shall have to leave the Assistant Director of Public Health without any establishment at all.

Then we come to the question of the notification of infectious diseases. This is a very difficult problem. I once visited Borsad which was stricken by plague and the appalling state of things that I found there was really tragic. The Bombay Government print post-cards and entrust them to the *patails* On these cards, the names of the several infectious diseases are printed. The *patails* have to put a cross against the name of the particular disease and post the same to the Mamlatdar. Once, instead of putting the cross mark against ' cholera ' which was prevalent in a certain area, the *patail* put the mark against ' plague '. You can imagine the confusion that such a mistake caused. These things are in a very elementary stage and you have got to create machinery. But so long as you have not got health officers under the municipalities and under the local boards, I do not see how things can improve. Our primary need is a health staff under local boards and municipalities, who can be given directions to collect statistics. One of the most important points for the consideration of the Board at the present moment therefore is the introduction of health staffs in municipalities. Our registrars are generally failed medical students who know something about the nomenclature of disease and, from the places where they work, fairly accurate information is obtained. It is only in the rural areas, there is absolutely nothing either as regards notification or as regards registration of births and deaths. Registration of births is more inaccurate than that of deaths. I do not see how we can get over this unless we have a competent health staff and one of the first steps that this Conference has to take is to recommend that competent health officers should be appointed.

The Hon'ble Mr. Tamizuddin Khan : We in Bengal are following our own old method, which is unlike the centralised system introduced in Madras. Our Director of Public Health is full of praise for the Madras system and is trying to introduce it in Bengal also. But I am doubtful about one point. Colonel Russell said the Madras system is economical. It is only on account of the additional expenditure involved we have been unable to introduce the Madras system. The presidents of union boards collect information from their chaukidars and send their statistics to the sub-divisional officers and sometimes to the health officers. That is an anomaly. We are trying to set it right and avoid the delay in the final compilation of the figures. So far as registration of births is concerned, that is compulsory in Bengal both in rural and municipal areas.

The Hon'ble Srijut Ramnath Das : We have got a certain system in our province, but I must admit that it is very defective. It is an old system under which we do not get correct figures. Our Director of Public Health also wants the Madras system to be introduced, but it is all a question of finance. The financial condition of our province does not allow us to tackle the question and we are following the old practice. We get weekly reports about cholera and so on, but we get them very late. Our Director of Public Health has suggested a scheme for the prompt reporting of epidemics and we will adopt it and do whatever we can to improve the system.

The Hon'ble Mr. B. Dube : Our province was created very recently out of the three adjoining areas and therefore three different systems practically exist there. So far as the portion that has come from Madras is concerned, the Madras system is followed. In the portion which has come from Bihar and Orissa, the chaukidar collects information and gets the writer of the police station to record it. He registers the occurrence and submits the information to the civil surgeon, who in turn sends it to the Director of Public Health. In the areas which have come from the Central Provinces, the same system more or less is followed. In municipal areas, which are under the control of the health department, registration has been made compulsory.

There was a conference of local boards' chairmen and municipal chairmen some time ago which came to certain conclusions. They realised the importance of collecting vital statistics and decided that it was necessary and desirable that there should be a staff kept under the charge of the health department. The aim that they kept in view was that we should unify the activities of the local self-governing bodies in different parts of the province. While unifying their activities, we should also make provision for making the collection of vital statistics compulsory. In some parts it is now compulsory and our aim is to make it compulsory in other parts also. We are also making provision in the Act for provincialisation of the health staff. There is agreement in this respect between the district boards and the chairmen of municipal councils. So we are taking steps to make the different systems in different parts of the province uniform and are trying to make the collection of statistics compulsory.

Pandit Lakshmi Kanta Maitra : About the importance of the collection of vital statistics there can be no two opinions. The question is how to ensure the correctness of the data. Whatever may be the form of national planning, the importance of vital statistics cannot be over-emphasised. It has been made a common plaint that Provincial Ministers have not been able to do anything in this direction, the only excuse which is offered being paucity of funds, but I think that money spent in this direction is not money spent but money invested. My Hon'ble friend Dr. Ratan said something as to the nature of the inferences that could be drawn from these data Of course I know various explanations can be given for the figures. According to the ingenuity of each individual different explanations may be given for the same set.

The real question to my mind is the finding out of machinery for providing accurate registration in rural areas. Now this work is left in the hands of the village officer. There is the thana police station and all the surrounding villages for about 60 or 70 miles are put under the administration of this station, and the registering of vital statistics for all those villages is in the hands of the chaukidars in addition to their keeping watch and ward. They will adopt their own way in recording them and that is how things are being done. I think if we want to ensure accuracy, we must evolve some definite scheme. For instance, you may pay Rs. 4 or Rs. 5 to employees in the postal department as extra departmental remuneration and ask them to collect figures. Some such agency may be appointed and there should be a regular organisation to supervise their work. Otherwise it is impossible to get anything like accuracy. Health associations and bodies of that kind

will not carry us very far. We must impress upon all Provincial Governments the necessity of appointing a separate agency, more or less subsidised. I agree with the Hon'ble Dr Rajan that voluntary associations will not suit. There should be an official programme and the various large divisions must be broken into units, and for these units separate men appointed for collecting statistics and sending them on to higher authorities. Those who are in charge of cremation or burial grounds may also be made to collect statistics or the licensee, of these grounds may be made to do so. Medical men may also be asked to cooperate. I support the draft resolutions on vital statistics.

Dr. P. Parthasarathy : I also support the draft resolutions and I agree with Mr. Maitra that primary registration should be made as accurate as possible so that the final compilation and the results arrived at may be effective. In Mysore, we have a central office,—a collecting and compiling department,—under a special officer. On investigation, we found in selected areas that the accuracy was only about 50 per cent. Later on we introduced in the rural health unit area a system of checking the registration done by the patel or the village munsiff. The sanitary inspector is expected to spend the second week of every month in checking the registers of the village munsiff in all villages within his jurisdiction. As a result, accuracy has increased from 50 to 91 per cent. In draft Resolution No. 6 concerning vital statistics, it is stated that "The Board considers that it would be of advantage if public health departments could obtain information in respect of 'the age of the mother'". This system has been introduced in Mysore and is one of the points on which information is being collected. The work of the Department undertaking the collection and compiling work has been limited to two districts for want of funds.

Mr. M. W. Yeatts : I am glad to have the opportunity of making a few observations on this topic, because it is one for whose appearance I am in part responsible and one in which I take a particular personal interest. This question of vital statistics has a very great importance for the population census. The two in fact should fit in together as parts of a system. The Indian statistics problem and particularly that of the population census is one of dimensions. The dimensions aspect does not arise in our discussions here, but the aspect of accuracy and conditioning methods arises very prominently. If the ordinary vital statistics of the country give more regular information and are raised to a higher level of accuracy, the effect on census enumeration is profound, for people declare more readily and accurately what they have been used to in the past.

The Hon'ble Dr. Rajan referred to the common abuse of statistics. Statistics is indeed a dog with a bad name, in fact one of the worst names in the world, and yet that name is undeserved. It is essential before making deductions to be clear as to the value of the record from which you start. For example, take the four-figure quantity 7841. That figure may be a fact, it may be an opinion, or it may be a mere guess. Before we start making deductions from it, we must know whether it is a fact or an opinion or a guess. That is why I stress this point that any one dealing with figures should, before he proceeds to any deduction whatever, arrive at a conclusion in his own mind on the issue of fact *versus* opinion *versus* guess, and if his conclusion is—

as in the great majority of cases it must be—that the figure is not an absolute determination, then we should try to define the zone within which it lies. For example, take two recordings which we may call 'A' and 'B', of 100 and 80. At first sight 'A' would seem to be markedly greater than 'B'. But if you conclude that the margin of error in both is 10, then the two quantities may in effect be equal; hence the deductions you can now make from these two observations are considerably contracted. Clearly, if we make deductions unwarranted by the accuracy of our record, we may be landed in a very false position and it is because that happens so often that the unfortunate consequences referred to by the Hon'ble Dr. Rajan arise.

I have often thought that the educative value of statistics and of observations has never been sufficiently realised and I feel myself that it could enter at a much earlier stage into the educational system. It is part of the duty of any citizen to be able to observe and recount his observation. It is not a matter of advanced mathematics or indeed of mathematics at all, but merely an understanding of the value and the limits of individual observation. That is why I am rather sorry to hear the Hon'ble Dr. Rajan say that unofficial collectors of statistics are no good. One cannot put any one on to this job, but where we find a suitable man, I think we should use him. The field is wide in India in all conscience and the labourers are few. I would suggest, therefore, that the idea of our employing honorary collectors should not be ruled out and that where men, who have the competence, are willing, they should be used.

The Hon'ble Dr. T. S. S. Rajan : In fact that is what is going to be adopted in the coming census.

Mr. M. W. Yeatts : It has long been my desire to introduce this piece of information, for it is essential if we are really to be able to study the Indian population problem and make proper use of the magnificent opportunity presented by the mass of the figures. If you want these figures to tell you anything, then you must get the information down. In the ordinary day to day registration such detail may not at the present moment be of much use, but if we look ahead, as we should always do, we would have, say, ten years hence, information of the greatest value. That is why I was particularly glad to hear that in Mysore they have made a beginning in this direction.

I do not see why the schools and other Government departments, municipal bodies, etc., who may have to deal with men and women in large numbers as distinct from individuals should not help in this recording of vital statistics; and the more useful agents we have, the better.

Colonel G. Jolly : It seems to me that with better legislation, and organisation we may be able to effect improvement steadily. The great step we could take is to make the scheme successful in rural areas and, until we do that, we cannot get any very great improvement. That is why I think, Madras, which has led the way in establishing a system of subsidised practitioners, has shown the example to other provinces, and until we are able to effect many improvements in the rural areas by establishing rural dispensaries and appointing efficient doctors to such dispensaries, it will not be possible to do away with the chaukidars in the matter of collecting vital statistics. At the moment we have in the

Punjab one doctor for every 30,000 of the population. I think I am right in saying that it is a better figure than that of many other provinces. Until we are able to have 15 to 20 doctors for a population of 30,000, I think we cannot succeed in getting fair and accurate statistics.

Some years ago in Burma the system of recording vital statistics by post was started. That system, I think, is capable of development. A printed post card stating the fact of birth or death would serve the purpose. Even if the scheme were to cost 40 or 50 thousand rupees, I think that should not matter. This system might yield good results and would be of great use not only to Provincial Governments but to the Central Government as well.

Mr. V. K. R. Menon : In the memorandum a suggestion has been made that health officers and health staffs should take a keener interest in this matter. My suggestion would be that all inspecting officers should take a keen interest because I feel that so long as the police collect these statistics there will be further improvement if the sub-divisional magistrates looked into the registers. With a view to improve vital statistics the appointment of statistical Government officers as registrars can be adopted as a permanent measure, even if it is expensive. Statistics are now under the direct control of district medical officers. A new method of recording the data from villages has been introduced by which omissions could be easily detected. I am not convinced as to the accuracy of the figures collected by district staffs. However, we have eliminated a large percentage of errors by adopting this new method, and in course of time we hope to get down to a less fallible position. I can assure the Conference that one of the chief defects and one of the chief causes of error in the collection of statistics is the existence of the large number of intermediaries. I hope that under any new arrangement that may be made, some of these intermediaries may be eliminated.

As a result of the above discussion, the following resolutions were unanimously adopted by the Board :—

(1) The Central Advisory Board of Health is of opinion that improvement in the registration, collection and compilation of vital statistics is urgently desirable, as these records constitute the basis for all epidemiological and other public health activities. The Board considers that one of the first steps should be reduction of the present large numbers of omissions in the records of births and deaths. This depends to a great extent on the appointment of district and municipal health officers and other health staffs and on these officers and their staffs devoting more time to the supervision of registrars, to the inspection of birth and death registers and to the detection of unregistered vital events. The Board also considers that inspecting officers of other departments should take a greater interest in the improvement of village vital statistics.

(2) The Board recommends the employment of medical registrars in large cities and considers it desirable that minimum educational qualifications should be prescribed for persons holding the post of registrars in other areas. It also suggests that candidates for such posts should before appointment undergo an instructional course.

(3) As regards compilation work, the Board believes that this can be carried out most expeditiously and economically in the office of the

Director of Public Health and invites the attention of all Governments to the centralised schemes now in force in Madras Presidency and in Mysore State.

(4) The Board recommends the establishment of an organised bureau of vital statistics under the charge of a trained medical statistician in the headquarters office of every Provincial and State Public Health Department.

(5) The Board, recognising the importance of obtaining more accurate records for international purposes, recommends that every Provincial and State Government should collaborate to the fullest possible extent with the Central Government's Public Health Department in respect of epidemiological and other vital statistical information.

(6) The Board considers that it would be of advantage if public health departments could obtain information in respect of "the age of the mother" and of "the number of the pregnancy" in relation to each registered birth and suggests that in selected areas attempts should now be made to collect these figures in order that the data so collected could be correlated with the material which will be available from the 1941 census.

(7) The Board is of opinion that statistical studies in the fields of medicine and public health should be pursued with greater vigour and stresses the necessity for additional trained medical statistical workers.

ITEM IV.—CONTROL OF SPREAD OF CHOLERA.

The Chairman : I think we may pass on to the very important item in the Agenda—Item No. 4, and the Secretary might initiate the discussion.

Colonel A. J. H. Russell : The epidemiology and prevention of cholera have always been to me matters of profound interest and it gives me particular satisfaction to initiate a discussion on this subject at a meeting of the Central Board of Health.

The Memorandum (Appendix II) now before you does not claim to be exhaustive : in its five pages, only certain points have been mentioned, these being related to the proposals made in the notes communicated by the Punjab and Mysore Governments.

Before going further, it may be useful to give a few figures, not yet generally available, concerning the past year's cholera epidemic. Between 1st January and 24th December, 1938 recorded attacks and deaths from cholera in British India totalled approximately 3,20,000 and 1,54 000 respectively, the worst affected provinces having been U. P. with 70,000 cases and 34,000 deaths, C. P. 94,000 cases and 43,000 deaths, and Bengal with 84,000 cases and 42,000 deaths. The Punjab reported 8,600 cases and 4,600 deaths during the same period.

Examination of the quarterly figures throws additional light on the course of the epidemic. Up to the end of March, the total cholera deaths numbered 13,000 of which over 9,000 occurred in Bengal during the usual seasonal wave and 2,700 in Madras Presidency. Except for scattered cases, the rest of India was more or less free from cholera up to about the end of March. On the other hand, between 27th March

and 2nd July, the U. P. recorded over 20,000 deaths as compared with 94 in the previous quarter and it is obvious that some new factor came into force during this period. In the C. P., also, cholera deaths increased to 9,000 during the second quarter as compared with 145 in the previous three months, whilst the Punjab which was completely free from the disease during the early months of the year recorded 7,400 attacks and nearly 4,000 deaths and Delhi Province also reported a fresh infection which caused 153 deaths. The only other provinces which reported serious increases in the incidence of the disease during the period March to July were Bihar and Orissa and to a lesser extent Assam.

During the third quarter, the U. P. recorded a further 10,000 deaths, whilst the C. P. suffered intensely having over 70,000 attacks and 31,000 deaths. The Punjab epidemic gradually faded out between July and October, only 617 deaths being recorded, but in Bihar over 5,800 deaths were registered. Bombay and Madras Presidencies were also more affected than during previous quarters.

During the fourth quarter, cholera decreased markedly in all areas except in Bengal The Punjab and Delhi Provinces were completely free ; in the U. P. the mortality fell to 2,900 ; in Bihar to 3,500 and C. P. to 2,900 ; whilst Bombay and Madras Presidencies also recorded considerable decreases.

It is possible that defective rainfall and other meteorological factors in certain areas were partly responsible for the rapid development of the 1938 epidemic, but there seems little doubt that the most important cause was dissemination of infection following one of two large festivals held in the U. P. during March. Important days for the Hardwar festival were 28th February, 31st March and 13th April, the total attendance on the last date being about one million persons. It is not possible to give here details of the routes of spread or of the dates on which infection appeared in different localities, but undoubtedly the disease spread rapidly. The rapid dissemination may be instanced by the fact that by 23rd April 1938, 27 of the 29 districts in the Punjab had reported cases. Study of the course of the disease in the U. P. and in Bihar and C. P. also seems to point to the Hardwar festival as an important factor in the development of the epidemics in these three provinces.

In this brief summary I have tried to give a rapid sketch of events in the various provinces, but discussion of this subject will I hope centre mainly around the methods to be adopted for the prevention of similar occurrences in the future.

The memorandum indicates what has been done during recent decades by means of the sanitary control of festival centres to check the potential spread of cholera and other epidemic diseases from these foci of infection, and during 1938, the Rathjatra festival, which was held at Puri in Orissa in July and which was not followed by any outburst in spite of the existence of infection in neighbouring areas, provides a further instance of the great possibilities in this direction. Every public health officer in India realises that any relaxation in the sanitary control of these festival centres is likely to result in disaster, in view of the general lack of sanitary amenities throughout the country and particularly along the routes used by the pilgrims.

The question of mass inoculation will no doubt be a matter of discussion and the Board may feel that something more should be done in this direction, although I hope due note will be taken of the words of caution included in the printed memorandum.

The only other point to which I wish to refer is that of the anti-cholera vaccine. Information regarding the anti-cholera vaccines in use has recently been collected from different provinces and States because it had been found that in certain areas cheapness of the vaccine was the criterion adopted in preference to potency and protective value. Recent serological work done in India has proved that there is one and only one true *V cholerae* and it is important that *all* cholera vaccines should be prepared from strains of this organism alone. It is by no means certain that those engaged in the manufacture of anti-cholera vaccines are all sufficiently acquainted with recent bacteriological findings and it should be the duty of all public health departments to ensure that the vaccines they use possess a high protective value. It would be disastrous if the people of India lost their belief in the value of anti-cholera inoculations and all Directors of Public Health and others responsible for public health should make certain that this does not occur. I cannot stress too much the importance of this matter.

What I envisage as necessary for the better prevention of these devastating and harmful outbreaks of an easily preventible disease may be summarised as follows :—

(*a*) Well-organised public health services in each province and State, both in the form of trained medical officers of health, of qualified sanitary inspectors and of other personnel. Mobile units might be made available for use at the more important festival centres.

(*b*) More strict sanitary control of all festival centres, especially in respect of protected water supplies

(*c*) Protection of pilgrims by anti-cholera inoculation. The query is in respect of compulsory or of voluntary inoculation and the answer is not easy.

(*d*) The use of an anti-cholera vaccine of proved value.

(*e*) Inspection posts on all railways and roads leading to and from festival centres. For many years past, these posts have shown themselves to be of great value.

(*f*) The more speedy interchange of epidemiological information between provinces and States and direct interchange of such information between the health officers working on the boundary districts of different territories.

The Hon'ble Dr. T. S. S. Rajan : This is certainly a very interesting subject from the point of view of public health—the successful prevention of a scourge which is taking away millions of our people. The tragedy of it is enhanced when we know that it can be prevented. I support practically every suggestion made by Colonel Russell and in so far as this province is concerned we are following the lines suggested in the memorandum. We have realised the importance of a protected water-supply, particularly in rural areas, and we have now prepared a scheme for 10 years during which time we propose to give a protected water supply to every village. The scheme was commenced

last year and we have now been able to provide wells for one or two villages in each *firka*. We have prepared a priority list for all districts and work is taken on hand according to this list. We set aside Rs. 15 lakhs last year as a fund to which every year we propose to add according to the finances at our disposal. The whole work is to be done by the Provincial Government without any reference to the capacity of the villages or the local bodies to finance the schemes. We hope that when once we have provided this fundamental need, we will have gone a long way to control this epidemic disease. During festival times, we sink temporary tube wells wherever it is possible. A health committee sits in each of these areas even two or three months in advance of the fair or festival and plans out a scheme in conjunction with the railway authorities, local authorities and the Director of Public Health. By providing a protected water supply, we have been able to a large extent, particularly during the course of the last year, to reduce the number of epidemic outbreaks in the province.

Epidemic cholera enters our province from three outside sources. In fact we have to pay the penalty of death on account of the import of this disease from such distant places as Hardwar, Cuttack and Puri. We tried to prevent the spread of infection by posting health officers on the northern frontier of our province, but we have not been successful. I do not know how far the posting of health officers at railway stations is successful in preventing epidemics. When thousands of passengers come and go in a railway station, in all the turmoil associated with such matters, I should think that a doctor would really be super human if he were able to spot cases of cholera. When once protected water supplies are provided in festival areas, I think we shall have gone a great way towards solving the problem.

With regard to affording protection by means of inoculation, we have been trying this. but I must confess that it does not appeal very much to our festival crowds. During epidemics when people see that other people are dying of the disease, they come in voluntarily for inoculation, but when you address a pilgrim crowd on the necessity for getting protected against cholera by inoculation that does not carry very much conviction I wonder whether compulsion would carry us further. I have come to the conclusion that the general attitude of our people towards inoculation has changed very much in recent years. I think the correct approach to the question lies more in the way we have been going than in any compulsory legislation with all its consequences. Although it is imperative that we should have some method of protecting our people, legal compulsion of this sort may not be very effective especially in dealing with large crowds of pilgrims In our public health bill, we have made it compulsory during times of epidemics and I have been able to carry conviction to the minds of our legislators that such a power is absolutely necessary. We had a very severe outbreak of cholera in Guntur some time back ; I personally took part in dealing with the situation along with the Director of Public Health. I was able to demonstrate to the citizens of Guntur that, given the necessary cooperation with the Health Department, any epidemic could be successfully controlled. It was about 20 days after the epidemic had broken out that I happened to be on the scene. The local private medical practitioners were either absolutely indifferent or did not give the coopera-

tion that any medical man ought to give under such circumstances. I asked them why they did not come forward. They replied that they had not been asked to help. Then the Collector convened a conference of the local practitioners and, with their cooperation, every well was chlorinated and everyone was inoculated. Within about a week's time the epidemic was eradicated from the town and I am sure that what was possible in Guntur with about 60 to 70 thousand people is certainly possible everywhere. I am simply showing that with a large army of private practitioners,—in our province we have about 6,000,—we should be able to check the epidemic. We have also empowered sanitary inspectors and first class vaccinators to inoculate during epidemics. They have done this work very well so far. Then we have got one or two other problems. We had a virulent outbreak in Badrachalam during the Rama Navami festival. That place is just on the borders of Hyderabad State, being situated on the banks of the Godavari. The pilgrims drink the river water and any provision made for a protected water supply does not appeal to them. An epidemic started there, as a result of which, four districts which supplied pilgrims to the festival suffered for four or five months It was really difficult to eradicate the disease from that place. I am fairly certain that in India cholera is transmitted along pilgrim routes and more or less by fairs and festivals. And we have got festivals right through the year.

This takes us on to the next question : how to deal with cases for which no ostensible cause is found. There are no festivals and no fairs and yet sudden outbreaks occur, not in an epidemic form. In respect of the theory of cholera carriers, we have been working at one or two stations, such as Madura, but we have not been able to arrive at any definite conclusions. I believe that there is something which we have not yet been able to get at in the history of the epidemiology of cholera during non-festival seasons. You have no festival, you have a good protected water supply, and and yet even in cities where the water is tested, you have cholera. It may be urged that all people do not drink protected water. This is a possible explanation but I think there is something in the theory of the carrier of infection and further investigation is required.

The third point with regard to cholera is that efforts at treatment have been very successful in recent years. It is not often realised that curative treatment has advanced to such an extent that the mortality rate has been considerably reduced. In fact, in Guntur, the records showed that we could reduce mortality to as low as 12 per cent. and this was due to the rapid arrangements made for treatment. Immediately on the onset of the attack, the patient is sent to the hospital or other place where he could be properly attended to. Given an effective organisation, apart from preventive work, there is much to be said in favour of immediate and effective treatment and, provided suitable arrangements are made to receive the people affected, it is possible to reduce mortality. But any amount of treatment is no good unless we are able to control the recurrence of epidemics in season and out of season.

Another point which I have already mentioned is with regard to forecasting of these epidemics.

The question of the prevalence of cholera in Bengal, which seems to be the inveterate home of this infection, is a very important one. The danger to the rest of the country is always there and it is but just that

we should all pull hard together to get at something like success in a very preventible disease which certainly is not beyond the means of human intellect and human organisation. These are the points which I wanted to place before the Board for its consideration

The Hon'ble Dr. M. D. D. Gilder : The problem of cholera is undoubtedly a very interesting one. In our province, the ordinary water supply to the villages has been considerably improved and we are not waiting for the district boards and the local bodies to pay contributions. As soon as we came into office, we budgeted for Rs. 10 lakhs for water supplies, but the whole of it was not spent that year. The following year we also provided a similar amount and we propose to provide the same amount next year.

Coming to fairs and festivals, we have established at every fair centre a permanent pilgrim committee which looks after the water supply of the centre. The water supply of these centres is now fairly good. With regard to these pilgrims, we have what are known as *palkis*. At first 25 to 30 people start from a place and as they go on the number swells to 500 or 600. They march for 100, 200 and 300 miles for a period of one to three months. The difficulty is to keep the whole route of the pilgrimage absolutely safe We have also framed a time table for the *palkis* route march and we have asked the revenue authorities to see to the water supply of the villages through which they pass. In this way we have succeeded to some extent in keeping out cholera.

As regards compulsory or voluntary inoculation, we have no power under the Epidemic Diseases Act to compel a person to be inoculated, but under the Act we can prevent anybody from entering the centre. The Government ordered that no person would be allowed to enter *jatra* centre unless he was inoculated. During the last *jatra*, myself and Mr. Kher were present ; the whole of our public health staff was there and we found we had not the least difficulty. We give them free inoculation ; and we give it not only at that centre,—the charges for which are borne by the Pilgrim Committee,—but also at all places where they enter the province. We are very glad to state that the Government of His Exalted Highness the Nizam have cooperated with us in this matter, so much so that when His Highness's subjects come to our province, we find that most of them have been inoculated before entering. If they come with an inoculation certificate, there is no objection to their entering the province, and in case they are not armed with such a certificate, they are inoculated on the spot, *i.e.*, at all places of entrance into the province, either by road or rail. All places of entry are regularly guarded and there are a good number of doctors to inoculate any number of people that come. For instance, last year out of an approximate attendance of about 1,70,000 people at the main festival, about 60,000 people brought inoculation certificates with them and about one lakh and over were inoculated on the spot. The Hon'ble the Prime Minister and I were present and we found there was no grumbling at all. People voluntarily came forward, and they even brought their children to us saying : " inoculate these children as we want them to be fully protected against disease.".

I would rather take exception to the resolution as it is worded, because, I feel that the time has not come for introducing compulsory inoculation. At least so far as our province is concerned, there is no diffi-

culty as regards mass inoculation, with an indirect compulsion, if you may so call it.

As regards cholera vaccine, I would suggest that the information given should be broadcast to all medical practitioners. As a medical practitioner myself, my practice did not lie in the epidemic line, and I was not myself aware of this till I read it in the memorandum. Medical practitioners should be told that there is only one cholera vibrio and that the proper vaccine should be used. We provide vaccine from our own Institute, the quality of which we are perfectly sure about.

As regards the last resolution that has been tabled regarding co-operation between the public health departments of neighbouring provinces, I consider that to be absolutely essential. But I should like to add that sometimes fairs are stopped and we are not told that they are stopped. For instance, one fair on the other side of the Tungabhadra river was to take place, but that was stopped by the State on that side and we were not aware of it. The result was that the fair was held not on the other side but on our side of the Tungabhadra river. In this case, therefore, we should have been made aware of the fact that the fair was stopped. I consider that this is a very important matter.

As regards approach to the general public, as I said, in our province we find no difficulty whatsoever. Of course, there are always some people who have preconceived notions and ideas and can never be converted; but generally we have not found much difficulty in convincing the people of the necessity for being inoculated, whether they are medical men or laymen.

As far as cholera outside these fairs and festivals is concerned, our province has got some peculiar features. For the last four or five years, our cholera morbidity and mortality figures have been steady. If you take the figures for the last ten or fifteen years, you find that whenever there has been a wide flare-up of cholera in any one year, in the next year there has been low mortality. It seems to me, therefore, that people who are not immune have been wiped off and people who have been immune have been left behind. Whenever a cholera epidemic starts, the Government immediately moves in the matter and tries to suppress it. What we have done is to see that, whether the epidemic is small or large, inoculation is done on a large scale. So, in the case of epidemics, small or large, whether starting by itself or as the result of pilgrimage, mass inoculation on a large scale by persuasive measures should be undertaken, in order to prevent a recurrence of the same epidemic in subsequent years.

I agree with the Hon'ble Dr. Rajan that if proper treatment is taken in hand, there is every chance of mortality being considerably reduced. But it must be remembered that modern treatment of cholera requires a regular army of doctors and a great deal of the doctor's time for each patient. It is not merely the writing of a prescription and the taking of medicine; it is a matter of putting saline under the skin of the patient. So long as epidemic officers and moving parties are available, I do not see why this method cannot be followed on a more extensive scale than at present.

The Hon'ble Mr. Tamizuddin Khan: My Hon'ble friend Dr. T. S. S. Rajan has stated that Bengal is the home of cholera and it is a

source of menace to neighbouring provinces. I quite agree with him that Bengal is the home of cholera ; but I doubt whether it is the native home or the adopted home—I don't know which. So far as pilgrim centres are concerned, there are actually very few centres in Bengal. As far as I know, Bengal supplies the largest numbers of pilgrims ; that being so, Bengal suffers to a very great extent from outbreaks of cholera at those pilgrim centres from which the pilgrims carry infection back to Bengal and spread it throughout the province. So far as Bengal is concerned, it appears to me that scarcity of good drinking water and abundance of bad water are the causes of cholera. Bengal is full of waterways and it is very difficult to protect these from infection. Once they are infected, it is difficult to prevent cholera from spreading throughout the length and breadth of the province. Sinking of tube wells nowadays has proved to be very effective. In Hooghly district, for example, there are a larger number of tube wells than anywhere else and it has been said that the incidence of cholera in that district has appreciably gone down. I therefore think that the more we provide tube wells, the more effective will be the prevention of cholera under present circumstances. I am glad to hear that the Bombay Government have been spending something like Rs. 10 lakhs a year for the last two years. We are spending about Rs. 1½ lakhs every year, and our local authorities and other bodies are also spending good amounts. The more we spend on this purpose, the better it will be for the country.

So far as the other question of compulsory regulations for inoculation is concerned, I do not fully agree with Dr. Rajan. I think that the objection to inoculation which prevailed in earlier years has disappeared to a great extent now, and if compulsion is introduced, I am sure it will be successful. If we undertake legislation, there would be some respect for law, and once people come to know that compulsion has come to stay, they will readily submit to it. Moreover, spread of knowledge has now killed the prejudice that existed some few years ago. So far as Bengal is concerned, we have a limited form of compulsion already. Under the provisions of the Epidemic Diseases Act temporary regulations can be framed ; when a local authority reports an epidemic the health officer or the Director of Public Health goes there and if they recommend, the regulations are brought into force in that area. Once the regulations are brought into force, inoculation is compulsory. That is the limited form of compulsion which already exists in Bengal and which has been working fairly satisfactorily. What my Hon'ble friend from Bombay suggests seems to be an excellent thing ; that is not actual compulsion but it is practically compulsion. How that is to be enforced in rural areas is however a matter to be considered. His method can be effective only in so far as a town or a city or a fair is concerned ; but if epidemics break out in rural areas at one and the same time, it is to be considered as to how the Bombay method can be usefully applied.

The Hon'ble Mr. Srijut Ramnath Das : I fully agree that this is an important subject, because no province is free from cholera. It is said that Assam has not got much cholera. It is true that we do not have cholera arising out of festivals, as we possess very few pilgrim centres. Whenever a place is infected by cholera, we send a cholera epidemic unit and if it cannot cope with the outbreak, it takes the help of the local board and if even that is not found sufficient, we generally employ a

number of doctors temporarily to cope with the situation. To my mind, instead of dealing with it during times of epidemic, we must find out some method by which we can prevent cholera before it actually breaks out.

As regards compulsory inoculation, I think it will be difficult in our province. The time has not yet come for introducing it. The method advocated by my friend from Bombay will be acceptable to us.

The **Hon'ble Mr. B. Dube** : This is a very important question to us in Orissa. As you all know, the Puri-Jagannath temple is a place of *jatra* festival ; it is so unique that people from Northern, Southern and Western India all come to Orissa. When the festival is approaching, it creates great anxiety in our minds as to how to cope with the situation. One or two months before the festival, we take certain precautions ; we send doctors to different places to control water sources and we send doctors to inoculate people who come from different parts of the province and from outside. Perhaps Puri is the only place where food is supplied to the people in the temple itself, irrespective of caste or creed. What I suggest is that the public health department may have control over food supplies. Without affecting the religious susceptibilities and scruples of the people, if the public health department can control the supplies of food that the people take in the Jagannath temple, some improvement can be noticed. In order to secure that end, necessary legislation should be undertaken.

Another point is that, so far as Orissa is concerned, the time is not yet ripe for enforcing compulsory inoculation. We induce people to undergo voluntary inoculation and in some cases this is successful ; but in respect of people coming from neighbouring States and other provinces, some coordination is necessary between the different authorities. Generally, we find pilgrims carrying infection coming from different places either by railway, on foot or by road. So, coordination is necessary even between the railways and the provinces and States. In spite of our best efforts at control, nothing useful can be done without coordination between these three authorities, until compulsory vaccination is introduced. Till then, at least an indirect compulsion must be insisted on.

Another suggestion I want to make is this : that water supplies should be controlled. We are taking measures for providing protected water supplies ; we have one in Puri and others also and we are spending some money out of the Government of India grant on this purpose.

The **Chairman** : Before we go further with the discussion, I would like to ask Mr. Dube one question. He said something about the control of food supplies. Is there any difficulty about carrying through legislation in the Provincial Legislature for such control ? This is a subject which is well within the powers of the Provincial Government to deal with. As far as I know, if the Orissa Government wish to introduce legislation to give them power to control food supplies for pilgrims attending the Puri festival, there can be no difficulty. I do not think Orissa is debarred from undertaking legislation on this question.

My next point is this : Col. Russell has stated that we lost about 1½ lakhs of people last year ; that was largely due perhaps to the Kumbh

Mela at Hardwar. We have here people who for religious purposes go to a place like Hardwar and on their return to their homes endanger the lives of practically every section of the population of the country, not only in towns of the Punjab but even those up in the Simla hills. I think we have come to a stage where we can tell the pilgrims " Certainly, we don't object to your performing what you consider as a religious duty, but in the performance of that duty, you must not endanger the lives of other people ". As regards the Haj pilgrimage, for instance, though the number of pilgrims there is very small, nobody is allowed to embark unless he has been inoculated against cholera and vaccinated against smallpox. The Arabian authorities will not admit unprotected pilgrims. What I want to ask the Board is, and especially the Ministers present here : " Is it not possible for us to say so, at least in respect of one big festival, that, for instance, nobody will be admitted to Puri unless he produces an inoculation certificate for cholera or a vaccination certificate for smallpox ?" We do not want to say that those who are not pilgrims should be inoculated ; but I really want to know whether the time is not ripe for us to take some such step. I know of course that in the beginning some people may not obey ; but once you introduce such a scheme, it is likely that, after some time, we will have a greater response and people will come round when they are convinced that they will be disobeying at their own risk. Especially at the present stage, with popular Governments in most of the provinces, who can well carry on propaganda in this respect and educate public opinion, it may be possible to bring about this very desirable result. I want Hon'ble Ministers to consider this point ; I do not of course want them to come to a decision at this moment. I hope Dr. Gilder will kindly help us with his suggestions, and as I said, I want the Ministers to consider whether it may not be possible to bring about this very desirable end in provinces like Bombay and Madras where a large number of fairs and festivals are held by impressing on intending pilgrims the necessity, in the interests of the country, for their being inoculated before undertaking the pilgrimage. Such propaganda will help a great deal and reduce the risks very considerably. I do not see any reason why, on occasions when millions of people congregate, we could not insist on inoculation and thus wipe out the terrible sources of infection which we see recurring almost every year. In my opinion this is one of the most urgent problems requiring consideration.

Dr. Hyder Ali Khan : I agree, this is a very important matter. We have got certain officers who can be sent at a moment's notice to any place where cholera has broken out ; we have also got mobile units to accompany the pilgrims wherever they go and to find out whether anybody has not been inoculated. As a matter of fact, nobody is allowed to enter the State unless he has been inoculated and produces a certificate of inoculation. Any one who has not got such a certificate is inoculated by medical officers and health officers travelling with pilgrim parties who see that nobody escapes inoculation. In this way, we have reduced the risks involved to a very considerable extent.

Colonel A. J. H. Russell interpolating : For the information of the Board. I would just like you to explain how you ensure that everybody who comes into the Hyderabad State is inoculated.

Dr. Hyder Ali Khan : We have got our men at all places where people enter the State. Those coming from the Bombay side, as Dr. Gilder said, have inoculation certificates : otherwise, they are inoculated and only then are they allowed in. The difficulty is that not only do the people carry infection in their own person, but they do it through the water that they carry with them ; for instance, they carry Ganges water which has got infected and when they drink it, the disease breaks out. As far as inoculation is concerned, we have not felt any difficulty as people readily come forward and there is no need to put pressure on them. The medical officers and the public health staff are ready to carry out inoculations, whilst necessary medicines are also kept ready. Therefore, at least in our State, there is no necessity for any legislation. Some reference is necessary regarding the railway authorities. I shall be pleased if the Advisory Board draws the attention of the railways to the necessity for cooperation for the prevention of cholera.

As regards water supply, it has been found by experience that once you improve the water supply, cholera practically disappears. I am glad the question of treatment of cholera has been brought forward. I think if proper and timely action is taken many lives can be saved. It is a very good suggestion to make the possession of a certificate of inoculation compulsory.

Major General E. W. C. Bradfield : Since mass inoculation has been advocated, I wish to stress the point that cholera vaccine must be made from the true cholera organism. I do not say cheap vaccine is inadvisable, but I say, useless vaccines are on the market, and if mass inoculation is to be done with such vaccines, enormous harm will be done, and probably the clock will be set back several years. I would submit that in purchasing vaccine, every public health department should make certain that it gets its supplies from a reputable laboratory and further these should be tested in the provincial laboratory. I understand such tests are carried out in Guindy.

Lieut.-Col. C. M. Nicol : I am in favour of the alternative Resolution 5, that compulsory inoculation should be examined by a sub-committee. I have had experience of a refugee population which ran into thousands They did not like personal interference ; there was no cholera, yet they were all easily inoculated. In the case of pilgrimages in North India, mass inoculation has been practised and in this way many lives have been saved.

Lieut.-Col. G. Verghese : Stressed the necessity for health organisations in States adjoining British India provinces, in order to control more satisfactorily the spread of infectious disease from these areas.

Colonel J. A. Manifold : Illustrated the value of cholera inoculation by quoting instances where inoculated troops moving about in heavily infected areas either escaped infection altogether or if cases occurred very few proved fatal.

Pandit Lakshmi Kanta Maitra : We have had an interesting debate as to whether there should be compulsory inoculation or not. From my childhood onwards I have been taught to keep food and drink from flies and dust, but beyond insurance against cholera by inoculation

nothing has been said. I admit, by inoculation you will have freedom from the disease. I myself have had it along with members of my family. One had an attack, but in three days' time he recovered. The utmost we can say is that vaccine only minimises the danger, but who is there to say the quality of the vaccine is all right? As we have heard, Governments have already started by taking measures for the provision of adequate water supplies and by taking proper conservancy measures for the disposal of sewage, etc. By taking these measures, we can reduce these outbreaks to a minimum. If you want all pilgrims to produce certificates of inoculation, it will be a well-nigh impossible task. This is not a matter which can be solved by legislation and I suggest the question should be left at this stage to propaganda.

Lieut.-Col. A. C. Chatterji : I would suggest that those provinces where pilgrimages are held should issue a warning to adjacent provinces that unless their people come fully protected against cholera and smallpox, they will not be admitted. During the last Kumbha Mela, we posted vaccinators and inoculators on board ships, on rivers and on railway junctions and thus inoculated thousands of persons. We had difficulty with certain persons who argued about their rights and for such cases it would be better if we had compulsory powers.

The Chairman : As regards Mr. Maitra's remarks, I may say that in the Haj pilgrimage although thousands congregate from all parts of the world, there is not now a single case of cholera, whereas formerly, just as in other cases of pilgrimage, it was a tussle with death. Whether you came back alive or left your bones there was a matter of chance. With the new Governments in power in the various provinces, an advance can be made.

The Hon'ble Dr. T. S. S. Rajan : I would suggest that a small committee be appointed to go into this question. There are many difficulties when you make a recommendation about compulsory inoculation. In Madras we have 600 fairs and festivals in the course of a year and on some of these occasions we have got to mobilise the whole provincial health force. Then we shall have to consider the system of issuing certificates. We have learnt a very bitter lesson in this respect. I would hesitate very much to put our trust in certificates which may be granted for a few coppers.

Dr. P. Parthasarathy : The Mysore Government have taken steps for the prevention of cholera by providing good water supplies at many fairs and festivals, but unfortunately Mysore suffers from the introduction of infection from outside. The proposal that we have sent up is that if each provincial administration or State provides a programme of work for providing protected water supplies within a period of years and at the same time provides sanitary arrangements, it would go far to solve the problem. Vaccination no doubt has to be undertaken during emergencies, but as preventive measures, the two steps I have suggested may be adopted.

As regards vaccine, we can produce enough of the right type to meet our requirements. The difficulty is in regard to funds for good water supplies at fairs and festivals.

The meeting then adjourned.

Tuesday, 10th January, 1939.

The Chairman : I think yesterday there was a suggestion by the Hon'ble Dr. Rajan that it might be desirable to appoint a small committee to go into the question whether or not in present circumstances compulsion is feasible and, if it is feasible, what are the administrative problems to be faced. It seems to me that it is necessary to adopt this suggestion, as each Minister will have to see how his electorate reacts to the suggestion, because this is not a purely health question. I think, therefore, that it would be desirable to have an authoritative report for the Board's consideration as this will carry greater weight with the Ministries in the provinces. I suggest, for the consideration of the Board, that we appoint a committee with the Hon. Dr. Rajan as Chairman and if, Dr. Gilder would agree, he will be a member in addition to the Public Health Commissioner and two others. The Committee should be a small one of not more than five members. Perhaps Dr. Mathur might be willing to serve and Col. Nicol also. Does this meet with the approval of the Board ?

The Hon. Mr. Tamizuddin Khan : A representative from Bengal also may be on the Committee to which the Chairman replied : We cannot afford to leave out Bengal. Lt.-Col. Chatterji may also be a member. That means six. The time and date of the meeting can be settled later on, but the quicker it meets the better.

Dr. Gilder : In regard to the vaccine question it would probably be better if medical men were informed immediately. I think that can be done without waiting for a report from the *ad hoc* committee. I think we can issue a press *communiqué*.

As a result of the above discussion, the following resolutions were unanimously adopted by the Board :—

(1) The Central Advisory Board of Health desires to invite the attention of all Governments in India to the recommendations made in the various Pilgrim Committee Reports prepared during 1913-16 and stresses the importance of implementing the recommendations contained in these reports, particularly in connection with the control of cholera.

(2) The Board expresses the emphatic opinion that all medical and public health departments should ensure that the supplies of anti-cholera vaccine employed are prepared from the true *V. cholerae*, so that inoculation will continue to give a high degree of protection.

(3) The Board further recommends that each Provincial and State Public Health Department should draw up definite and detailed plans for the sanitary control of all festival centres in their territory and that these plans should include clear instructions for the guidance of local officers responsible for the sanitation of individual festivals and of the routes likely to be used by the pilgrims.

(4) The Board recognises that control of the festival centres themselves is not likely to give complete protection from the danger of cholera and recommends the more general provision of protected water supplies and of adequate conservancy measures, particularly along the routes used by pilgrims.

(5) **The Board, having discussed the question of protection conferred by anti-cholera inoculation, recommends that the possibility of introducing a system of compulsory inoculation of all pilgrims be examined by a Sub-Committee of the Board and that a report on this matter be submitted at the next meeting.**

(6) **The Board recommends close cooperation between the Public health departments of neighbouring provinces and States in respect of any special precautionary measures which may be prescribed and particularly in regard to the cancellation of, or prohibition of attendance at, a festival because of the danger of epidemic disease. The Board further suggests that local health officers in their respective provinces and States should make mutual arrangements for the rapid interchange of up-to-date and exact information regarding all outbreaks of epidemic disease.**

ITEM V.—PUBLIC HEALTH ORGANISATION.

The Chairman: The next item on the agenda is the consideration of a memorandum on Public Health Organisation. I will ask the Secretary to open the discussion.

Colonel A. J. H. Russell: The short memorandum on Public Health Organisation prepared for this meeting will I hope be considered as an addendum to the longer document on the same subject presented at the previous meeting of the Central Advisory Board. The fact that the question of medical and public health services occupied a prominent place in the agenda of the Java Conference on Rural Hygiene indicates the general belief that improvement of these services is of vital importance to all Eastern peoples.

As regards the establishment of a Central Health Board at the headquarters of each province, the cyclostyled papers which have been distributed show that the resolution passed by this Board 18 months ago has already been acted upon in a few provinces. It is to be regretted that no information on the matter has been received from a number of other provinces. Those members who have experience of their Provincial Health Boards will perhaps be able to give some description of their constitution and their activities and the representatives of the provinces and States which have not yet formed Advisory Health Boards will no doubt be interested to hear of their working. Personally, I have no doubt as to their value.

It would be of advantage, also, to hear something of the activities of the "Health Units" now at work in more than one province, something of the lessons which these concentrated efforts in public health administration and education have taught and something of the lines on which their activities may best be expanded for the benefit of wider areas and larger populations. As the memorandum states, it is impracticable to suggest that India can find the money to provide, for the whole country, organisations on the scale set down for these restricted areas and populations. It may be, however, that the public health departments concerned have already envisaged the possibilities of expansion of 'Health Unit' work to wider areas and larger populations

and will be able to give this meeting some idea of the directions in which that expansion may suitably be achieved.

Available information in respect of the numbers of trained health officers and other health staffs employed in different provinces and States does not unfortunately carry us much beyond the position set out in 1937 and in many areas trained health officers are still conspicuous by their absence. It would be both interesting and useful to learn of the action it is proposed to take in this direction. The new Madras Public Health Act shows that the Government of that province are very much alive to the importance of a well-organised and active public health department, staffed by fully qualified medical officers of health, but whilst certain other provinces have made some degree of progress, there is still a great deal of leeway to be made up in other parts of the country before the position can be considered satisfactory. I would like to stress once more the importance of 'security of tenure' to health officers. By that phrase I do not intend to convey the impression that a bad health officer should not be got rid of, but rather that a good health officer should have the assurance that honest work and sincere and frank opinion will not result in efforts to deprive him of his post. It is more than desirable that the terms of service for medical officers of health should be definitely laid down by Provincial and State Governments and although this may on occasion be done by executive order it is much more satisfactory to include these terms in a Public Health Act.

For many years past, in and out of season, I have stressed the importance of consolidated Public Health Acts for every province of India and if it will not be considered an impertinence on my part, I should like to congratulate the Presidency of Madras on the appearance of a legislative measure of this kind on its statute book. The new Madras Public Health Act will without doubt be the precursor of a new era in the domain of public health in South India, and it is to be hoped that other provinces will shortly follow this good example.

These are the main points mentioned in the short memorandum now before this meeting. That memorandum, as I have said, is for the most part an addendum to a previous memorandum considered by this Board, but it has the added support of the resolutions passed at the Java Rural Hygiene Conference. The questions contained therein are of such importance to the future welfare of India that no apology is made for what may seem reiteration.

The Hon. Dr T. S S. Rajan: The public health organisation in our province is, as has been outlined to a certain extent by Colonel Russell, fairly comprehensive. We have a well-protected service under the terms of the Service Regulations and I may assure the Board that the protection afforded to our health officers and health subordinates is as good as any afforded to the other classes of Government servants in other departments. In fact, I have sometimes wished that they did not have so much protection. But still, this is as it ought to be, because a well-contented service is perhaps a *sine qua non* for any good administration and I do not believe in having an army of discontented public servants.

All the health officers of local and district boards are paid by Government. In regard to municipal health officers, 75 per cent. is

paid by Government and the remaining 25 per cent. is paid by the municipalities. Municipal sanitary inspectors are entirely paid for by the local bodies. In all other cases, we have more or less a complete provincial organisation and all the rules and privileges that apply to other Government servants are also extended to these officers. From the point of view of pay or protection, our services have no cause for complaint and we have gone one step further which I should like to mention here. We are aiming at having as far as possible throughout the province one doctor for every five miles radius. No doubt we already have doctors within a five miles radius in large tracts of this province, but we are not able to locate as many dispensaries as we would desire. But at the same time we have enunciated a policy that these rural medical practitioners should also be health officers in their areas. With that end in view, we have training classes for rural medical practitioners in Madras. They are given remuneration and travelling allowance and this year we have already taken 25. We propose to follow this method until we have trained every one of our rural medical practitioners in rural sanitation. We have also provisionally proposed to give extra remuneration of Rs. 15 per mensem in addition to the subsidy. That is the advance we have made this year, and the number of doctors who are expected to be thrown into the field under this scheme is as much as 50 to 100.

With regard to the question of public health organisation, I feel that a definite effort should be made by all the health staff to get the sympathy and cooperation of all non-official agencies as far as possible, because for the success of any measure, whether it is in regard to public health or any other thing, public opinion counts a great deal, especially in places where there is unwillingness or ignorance on the part of the people to adopt certain measures. No executive authority or legal enactment carries us very far. Therefore, I think it would be right on the part of the Board to advise all local bodies to form advisory boards of public health in each district and, wherever it is possible, to coopt lawyers or schoolmasters or anyone who has some knowledge of ordinary hygiene and sanitation. I should also emphasise particularly the fact that every effort should be made to arouse sympathy in the minds of our women folk, because if we are to leave them out of account public health will be defective to that extent. I would suggest therefore that health officers be asked to form an advisory corps in all the villages and move with the people as frequently as possible and be sympathetic towards them. It should be part and parcel of the duties of the executive to make an earnest endeavour to enlist the cooperation of the people. I remember some years ago I started a ladies' training class and ladies belonging to middle class people attended. I was successful in gathering as many as 100 to 150 women, and I demonstrated to them the importance of maternity clinics. They took an intelligent interest and I was able to convince them of the usefulness of these clinics. I would like to stress this aspect of the matter because, once the cooperation of women is secured, the work will become easy. I want particularly to emphasise that the fundamental factor in the success of a health programme is that there should be cooperation.

Colonel Russell made a suggestion with regard to the protection of health officers. I should like to present the other side of the

picture. It is not as if our health officers are a body of saints. They do commit mistakes, sometimes grievous mistakes, and thus produce opposition in the minds of the public. It takes years for the public to lose that impression. The only way of dealing with the individual health officer who has committed such an offence is to punish him very severely and exemplarily, so that people may know that we are not pampering such health officers. This question of the highhandedness of health officers was raised in the Legislature during the Public Health Bill debate and arguments were used against our giving power to them. I admitted that we have to provide enormous powers to the health officers if we are to undertake a legislation of this sort, but at the same time I took care to provide in another clause of the Bill that these health officers shall be punished severely for any dereliction of duty. The punishment fixed is a fine of Rs. 1,000 and imprisonment of six months. We had to incorporate such a clause in the Statute inasmuch as we wanted to enlist the cooperation of the Legislature, and I took upon myself the responsibility for seeing that these officers would not misuse their power. While, on the one hand, we have given them enormous powers by means of one clause, by another clause we stated that they would be severely punished if they swerve from their duty. It was not merely to placate public opinion that I introduced such a penal clause for dereliction of duty, but because I realised that they had been invested with enormous powers and might misuse them. The rank and file of these men are recruited from all and sundry with one year's training, good, bad and indifferent. They have got very unpleasant duties to perform and they have to carry conviction to the people and make them believe in what they do in regard to new methods. Their work is difficult and I fully sympathise with them, but I also feel that these people will be much more capable if they have a clean conscience and a sense of responsibility in respect of their duties.

There is now no district in our Presidency without a health officer All the big municipalities, I mean three-fourths of them, have first class and second class health officers according to their financial status They have taken steps to appoint health officers because they find it easy to pay them inasmuch as we pay three-fourths of their pay and they are asked to pay only one-fourth. That is the scheme which prevails in our province and I must say that the local bodies to a large extent have thrown themselves into the work with eagerness. To some, of course, the proposal has not been very acceptable and they have been complaining, but we have been able to persuade them, for we have in the Health Act a compulsory statutory provision that each local body should spend a certain percentage of their income on public health. For instance, we have stipulated that a minimum of 30 per cent. should be earmarked for public health work in municipalities and 12½ per cent in district board areas. In practice, however, all municipalities are at present spending on an average more than 35 per cent. of their total income on public health. Statutorily, it is not necessary to fix this minimum, but as we have got one or two municipalities who are not spending as much, we had therefore to fix a minimum of 30 per cent. With regard to local bodies, they have to pay 8¼ per cent. already but now this has been raised to 12½. When you understand that in all public health schemes the Provincial Government has to pay one half

of the expenditure and the other half has to be paid by the municipalities, you will realise the amount of responsibility the Government has undertaken under the Public Health Statute.

There is one other point to which I wish to refer. With regard to public health organisation, cooperation is absolutely necessary, particularly in railway colonies. I have found a tendency in the case of railway colonies to resent any interference from the Government public health staff or the health staff of local bodies. One trouble is that the railway colonies discharge their refuse into neighbouring local board or municipal areas. When they discharge their refuse into our territory, our health officers have necessarily to take action. During discussions on the Public Health Bill, I had a conference with the railway authorities and they asked whether this legislation was going to affect them. I referred this matter to my legal advisers and was told that the new law would affect any property so long as it was situated in our territory. I told them that if they failed to observe the public health law, they would come under the clutches of that law. I also told them of the nuisance caused by discharging refuse into our territories. This is where I want them to cooperate in working the Public Health Act. We test free of cost the drinking water supplied at railway stations. We have supplied vaccines free of cost during times of epidemic. The food supplied in our stations is very good and at festival times the railway authorities cooperate with us and even supply free food to the pilgrims. We should, however, understand that the question of public health is not merely a provincial or all-India question, or a matter only concerning railways, but is one affecting humanity in general.

So far as public health organisation in cantonments is concerned, we are willing to give advice to them and to undertake health services in such areas. We have our health services in Malappuram, St. Thomas' Mount and also in Fort St. George.

So far as the Public Health Act is concerned, we have taken power to form committees, which Colonel Russell called advisory committees. We have now created a Statutory Board. Up till recently we had a Health Board, whose members were the Surgeon-General, the Director of Public Health and the Director of Guindy Institute and other experts. That committee met every quarter and made recommendations. This Board was only an advisory body. The new Statutory Board which we have created under the Act has got more powers ; it can hear appeals and give its decision on any contentious matter referred to it. Practically all the experts of Government are members of this Board. The Director of Public Health is its Secretary, the Hon. Minister in charge of Public Health is its President, whilst the Sanitary Engineer and Surgeon-General are members. Three members from the Houses of the Legislature are nominated. There was a long discussion about these nominations. We had requests from all sorts of people such as the railways, Public Health Propaganda Board, the Women's Association, etc., asking for representation, so we thought it best to nominate members from the Legislature who would be able to represent all interests. By the appointment of a Public Health Board we have created a corporate body invested with powers and not a particular individual or Minister. We had a certain difficulty in passing this legislation. People said that it was not safe to invest the health

officers with such large powers. All this opposition came from interested parties. What we have done is simply to codify all the provisions contained in the Local Boards Act, the Food Adulteration Act and all other provisions that have been distributed in over 15 to 20 Acts. In the interests of public health we found it necessary to incorporate various other provisions not found in existing Acts, for instance, chapters dealing with epidemics, festivals, markets and so forth. The Select Committee representing all interests passed a unanimous report. I do not think there will be any very great difficulty in passing this legislation, except in meeting the objections of conscientious objectors in respect of compulsory vaccination. My personal conviction is that if you want to make conscientious objections, you must be able to show that you have a conscience. Although I would like to meet the wishes of the conscientious objectors, certainly I cannot be deprived of my power to protect public health. I refuse to be a party to any such doctrine. Till the epidemics are rooted out, if the conscientious objectors agree to clear away from us, I have no quarrel with them. But if the conscientious objection is against the interests of society, then you will have to resist such objection, because I am entitled to take measures to prevent epidemics and if I do not do so I would be untrue to my education and to my faith. All this has been made possible by the elaborate health organisation in existence in this province. Public education has been going on side by side with public health work and public opinion about the Bill has been uniformly good, with the exception of the conscientious objectors to whom I have referred. People have spoken well of the Bill.

Pandit Lakshmi Kanta Maitra: What is the pay attached to health officers' posts ? I understand Dr. Rajan to say that the local bodies were spending over 30 per cent. of their income on public health work. Does this 30 per cent. include the expenditure on conservancy arrangements ?

The Hon'ble Dr. T. S. S. Rajan: I said that the municiaplities were spending up to 30 per cent. and over on public health. This includes expenditure on all forms of public health work such as conservancy, water supply, drainage, medical relief and sanitation, vaccination and inoculation. As regards grades of health officers, we have first class health officers who are posted to large municipalities. They are also put in charge of districts. For smaller municipalities, we post second class health officers. The old scale for first class health officers was Rs. 250—580 and the new scale is Rs. 200—465. For second class health officers, the old scale was Rs. 85 to 300 and the new scale is Rs. 80 to 250. Below this cadre we have about 500 health inspectors. We have got also first class and second class vaccinators and we have recently appointed women vaccinators also.

The Hon'ble Dr. M. D. D. Gilder: As I told you before, the Bombay public health department has been treated as a step-daughter of the curative department. Our chief difficulty is that our legislation does not provide for any definite expenditure on public health except in municipal areas. The Government pay half the salary of the health officers in municipal areas and two-thirds of the salary of the health officers in local board areas, but, even then, out of about 130 municipalities only 15 have

appointed health officers and out of about 20 local boards only two have health officers. With regard to the control of epidemic diseases, the Local Boards Act says that it is the primary duty of the local boards to look after epidemics so far as their funds permit. Their funds seldom permit of doing all that is necessary. I shall give you an instance. An epidemic of plague broke out in Gujrat. The Congress volunteers started working, but friction arose between them and the officials. In the end, the Government were asked to appoint a committee to investigate the matter and as they did not do so, the Congress appointed one. This is what took place. A case of plague occurred. One doctor took it to be a case of cholera and sent a report to the *mamlatdar* and the Director of Public Health. The wells were permanganated. The local board sent their dispensary doctor who found it was a case of plague. The local board said that the Government ought to deal with the outbreak and the Government said that the local board ought to deal with it. Ultimately a medical officer was appointed, but difficulties arose about the provision of syringes and fresh vaccine and nearly a week was wasted before inoculation was started. I am sorry to expose all this, but that is the condition of things in my province. We have no legislation to force the local bodies to take action and in spite of the fact that the Government gives half grants, many local bodies have not taken advantage of this.

At present this matter is under reference and a Committee is investigating the financial resources of local bodies not only from the point of view of public health but from all points of view in order to see how far the Provincial Government can set apart sources of revenue and how far they can insist on these sources of revenue being tapped. In some places, the sources of revenue are there, but the local bodies are afraid of raising taxation. That is another difficulty. We are considering what powers the Government should take to see that local bodies exploit their sources of revenue and what powers of compulsion and supervision the Provincial Government should have over local bodies in health matters. Until the Committee comes to a conclusion in these matters, no definite progress can be made.

As regards a Public Health Act, the Government of Bombay during the Governorship of Sir Frederick Sykes thought of passing such an Act. The matter has remained there. At present, the Government of Bombay intend to follow the lines of public health legislation in England ; they intend to take up the several questions one by one and after gaining experience of the working of different matters, they will proceed to have a consolidated Public Health Act.

As regards a provincial Advisory Board of Health, I do not quite know what its composition and functions should be. In Bombay the tendency at the present moment seems to be that all local matters such as water supply, looking after the sick poor, sanitation, disposal of sewage and so on come under the purview of the local bodies. There may or may not be a cadre of Government officers ; there may or may not be Government grants. But matters of more than local importance such as the prevention of epidemics, maternity and child welfare, factory legislation, sickness insurance and so on must be the concern of the local Government. We have therefore allowed local bodies to take over hospitals whenever they ask to do so. We give a Government grant in order to reserve the right of supervision. For instance, the Bombay Municipality is running

a big medical college of its own to which I had the honour to belong. The Ahmedabad Municipality is running a big general hospital. There is no reason why if the local bodies wish to develop along these lines they should be prevented from doing so. That would mean that on the side of the Surgeon-General we unload and on the side of the Director of Public Health we increase the load. We are relieving the local boards of one responsibility and giving them another.

The Hon'ble Dr. T. S. S. Rajan : That is what exactly happened here also. In return for taking over hospitals, we asked the local bodies to attend to water supply and drainage. That explains why we have such a large number of hospitals on our hands.

The Hon'ble Dr. M. D. D. Gilder : On our side, we have arranged that things that interest the local population should belong to the local boards and matters of general public health and general utility should be the concern of the Government.

As regards the Advisory Board of Health, we have a Public Health Advisory Board which criticises all new works of public utility. In 1932, there was also a proposal to abolish the public health department and make it practically subservient to the curative department under the Surgeon-General. This proposal was made by the retrenchment committee. I should like to hear from other members what experience they have of advisory boards of health and what functions should be assigned to them. As regards health units, we have not started any and we have no experience of them. We have opened a new department called the Rural Development Department with a fairly big staff which will be used for rural propaganda and rural sanitation. As I said before, our chief difficulty is definitely tho demarcate the duties of local bodies and the provincial Government and the financial responsibilities of each. Once we have done that, our progress will be quick.

The Hon'ble Dr. T. S. S. Rajan : With regard to health units, I forgot to mention one thing. For the last three years, we have got a health unit working in Poonamallee a place 15 miles from Madras. There we have made a survey of 25 villages. We have got a health officer, a woman medical officer, health visitors and an army of midwives who have now taken on maternity cases. We have vaccinated all the people and inspected all the children of the locality. Systematic health work comprising all forms of health activity has been going on. Statistics of the work have been published annually and such of you as care may go and see what is being done. The result of the three years work has been very encouraging and we hope that at the end of five years we will be able to give a definite idea of what can possibly be done by a comprehensive health unit.

The working cost of the scheme comes to eight annas per head and if this scheme were extended over the whole province containing a population of four crores the cost would be two crores. In a budget of 16 crores, we are spending about 2½ crores on medical relief and public health and we cannot add two crores to this expenditure. It follows that the cost of the scheme must be reduced. If the cost per head could be reduced from eight annas to two annas, we could have a universal health unit scheme. If necessary, a small tax would give us half a crore. Only last week I had

a conference with the cooperative department and I have framed a scheme for a cooperative health unit. The scheme is in its infancy and it has not been submitted to the criticism of the health department. The idea is to take a small contribution from such of those villagers as are willing to subscribe either in coin or in kind or in labour. The labourer will be engaged in cleaning the village and providing drainage facilties and so on. Gifts in kind will be sold or utilised for other purposes. The money subscribed will pay for the medical officer who will be in charge of a number of villages. We want to try a few experiments in this direction.

The Hon'ble Mr. Tamizuddin Khan : In Bengal we have a new scheme of public health organisation which the Commissioners of Divisions have approved, although some people consider it to be revolutionary in character. I will ask my Director of Public Health to explain the scheme and if this august body gives its approval, it will strengthen my hands in persuading my colleagues to accept it.

Lieut.-Col. A. C. Chatterji : The scheme that we have outlined is a combination of preventive and curative work. The idea is to have one small health unit for an area of two union boards with an area of about 20 square miles on an average and a population of about twenty thousand on an average. The staff will consist of one subassistant surgeon who will be specially trained in public health work ; he will have two health assistants, one for each of the two union boards. There will be also a part time midwife attached to the centre besides some menial staff. The subassistant surgeon will attend this combined centre about twice a week. In addition to this, he will have four other subsidiary centres established in the area. Altogether he will have five centres to attend to in a week. He will not only treat cases in these places, but he will be in charge also of school hygiene work and medical inspection of schools. He should first survey that area with regard to various public health matters and initiate schemes. For each union board there will be constituted one public health advisory committee, of which this subassistant surgeon will be secretary. The committee will formulate plans which will be sent to the health officer and then to the Government if necessary. The scheme is to be financed in this way. Part of the salary of the rural health officer will be found by Government. All incidental expenditure in the initial stage will be found by the Government. The recurring expenditure will have to be found by the district board. The pay of the midwives, the menials and the health assistants will be found by the union boards themselves. All structures like dispensary buildings, accommodation for the rural health officer and the health assistants will be financed by the union boards. We do not want any large brick and mortar building. All that we want is something of the type the villagers live in. We can easily provide these from materials available in the villages. The Public Health Advisory Union Committee will have the right to levy any small tax they want in order to meet recurring expenditure on medicines, construction of buildings and so on. The tax may be paid either in cash or in kind or in labour, as the Hon'ble Dr. Rajan said. The idea behind the scheme is that we want to make the people health-conscious, apart from having diseases cured. We want to make them lead a better life, better at least than the one to which they have been accustomed. We propose to begin with three or four districts and in the course of 7 or 8 years we propose to complete the scheme.

At present vital statistics records are compiled by the chaukidars, the union boards, the *thana* officers and so on. Under the new scheme the health assistants will be detailed to record vital events and the rural medical officer will check their records. Thus there will be close cooperation and a closer check on the records. I forgot to mention that there will be a village sanitation committee also, which will send its requirements to the union board public health advisory committee, so that it may consider the schemes and carry them out if they are practicable. In addition, the rural medical officer will take the initiative in combating the outbreak of epidemics and will be responsible for vaccination. The health assistant will be the permanent vaccinator. By this method we hope to bring down the incidence of smallpox considerably. In addition, we also propose to work in close cooperation with the irrigation, the public health and the engineering departments. For instance, many obstructions are found in rivers and canals when borrow pits are excavated. Only rarely do we get correct information in time, but these departmental people will be able to tell us at once of the trouble which has been created, so that we may bring it to the notice of the proper authorities. Further, in developing the scheme of tube-wells, we have found in many instances that these get out of order and cannot be utilised. In order to avoid delay in their repair, it is proposed to train the workers to carry out minor repairs to tube wells also ; and in this way, in the matter of rural water supply, there will be close cooperation with the rural development department.

The Hon'ble Mr. Tamizuddin Khan : In other words, the scheme is an amalgamation of all kinds of curative and preventive activities. On this question, it would be well to have the opinion of the Board.

The Chairman : I think it would probably not be fair to the Board to ask them to discuss the scheme of a particular province which has not been before them and which they have not had sufficient time to study. I think I must leave the discussion of this scheme to the Bengal Assembly, and I hope the Minister will be able to convince them. We have got a fairly heavy agenda and I will now ask Mr. Dube to deal with the item under discussion.

The Hon'ble Mr. B. Dube : In Orissa province, the medical and public health departments are under the control of one officer. Recently, an Assistant Director of Public Health has been appointed to help him in regard to public health matters and we have also appointed a malaria officer, whose duty includes training officers in malaria work. As I already said, in our province two systems are in vogue. In the Madras areas, included in our province the system described by Dr. Rajan is in force, *i.e.*, the two districts of Koraput and Ganjam have got first class health officers. The Berhampur municipality has got a second class health officer. All three are Government servants. As regards the other areas, *i.e.*, north Orissa in the Cuttack and Puri municipalities, the pay of the health officer is entirely borne by Government ; in the case of the other municipalities, the Government contribute one-half in some, one-third in others and three-fourths in still other cases. Government also contribute towards public health work in district board and municipal areas, for instance, towards good water supply and sanitary arrangements. We have a travelling health unit in one district for the purpose of carrying out propaganda in health matters ; we have also recently appointed a lady doctor for this pur-

pose. Our proposal is to unify the two systems that now obtain and to amend the Local Boards Act and the Municipalities Act accordingly. A Bill to amend the Local Boards Act is likely to be introduced in the Assembly shortly. A Bill to amend the Municipalities Act is also on the anvil and we hope to introduce it next session. By these two Bills, we propose, so far as rural areas are concerned, to decentralise public health work as far as possible. So far as rural dispensaries are concerned, naturally the officer in charge of the medical and the public health departments must have them under his control. We are taking all possible steps to have a good health organisation in our province, as far as our finances permit.

Colonel G Jolly: The Hon'ble Minister from the Punjab has not been able to come, but he has given instructions on this point to this effect that the Punjab has decided to appoint a provincial advisory board of health with suitable powers and also district committees. In regard to the subject of cooperation, it is already under close examination, but I am not authorised to make any statement as to the final conclusions which will be reached.

Mr. V. K. R. Menon: I merely want to explain that although my Provincial Government has not offered any remarks on this resolution that does not mean that we have taken no action in the matter. We are going to have qualified health officers in all district boards within perhaps the next two years. We have provided for health officers for half the district boards in the coming year and the others will have them the following year. We are going to have a Public Health Act on the lines of the Madras Act with of course a few modifications. As for health units, we have a rural reconstruction department which has units dealing with hygiene, sanitation, etc. I only wanted to make it clear that we are taking necessary action in this matter.

The Chairman: I think as a result of our discussions there will be little modification in the draft resolutions already circulated.

As a result of the above discussion, the following resolutions were unanimously adopted by the Board :—

(1) The Central Advisory Board of Health again invites the attention of all Provincial and State Governments to the recommendations on the subject of Public Health Organisations made at its meeting in June, 1937.

(2) In agreeing with the resolutions passed by the Java Rural Hygiene Conference on this question, the Board stresses the desirability of establishing in each province and State an Advisory Board of Health with the Minister-in-charge as Chairman and of constituting health committees at suitable centres and a well-organised public health department with qualified health officers and a suitable subordinate staff.

(3) As regards the necessity for bringing medical and public health services as near to the people as possible, the Board recommends that all public health departments should study the "Health Unit" schemes now in force in certain provinces. The expansion of the activities of these Health Units to wider areas and larger populations is a question which deserves serious consideration by all Provincial and State Public Health Departments.

(4) The Board recommends that every province and State should take steps to provide itself with a consolidated Public Health Act which will cover adequately every part of the field of public health.

ITEM VI.—COOPERATION IN PUBLIC HEALTH MEASURES.

The Chairman called on the Secretary to open the discussion.

Colonel A. J. H. Russell : At its meeting in June, 1937, this Board decide to appoint a committee to examine and report on joint civil, railway and cantonment health problems, especially in regard to the control of malaria. Later, in attempting to draw up terms of reference for this committee. it was recognised that the examination of the very numerous health problems in India, in which the civil, railway and military health authorities are jointly concerned, would constitute a most formidable task. It was decided that all that such a committee could be expected to do would be to produce evidence as to the nature and scope of joint health problems in India, and to suggest the general principles which might be adopted for the solution of these problems. The collection of evidence as to the nature and scope of such problems was regarded as the first essential step, and that accounts for the appendix to the memorandum before you in which are tabulated a number of problems which will require for their solution cooperation between the civil and military health authorities.

There is little or no information, in the appendix, however, regarding the extent to which the railway health authorities figured in this question of cooperation, but it is suggested that each Director of Public Health in cooperation with the railway authorities in his provnce should now set about assessing the problem in the same way as has been done in regard to civil and military cooperation. In the memorandum, it is strongly urged that the first step should be the formation of joint local health committees, including non-officials as well as officials, so that all interests may be represented. In this way, it is believed that practical programmes of work on cooperative lines can be planned without delay for the most important places in each province where progress in health matters is obstructed owing to lack of cooperation or lack of understanding, as the case may be, between the different bodies concerned. It is believed that more immediate results will be achieved by such local committees than by the formation of an all-India committee to study the question in relation to the whole of India. Later, it is hoped that the experience of these committees will enable the provincial authorities to see for themselves what modifications may be necessary in the present provisions, legal, financial and otherwise, which govern such cooperation.

The Hon'ble Dr. M. D. D. Gilder : I would only say that, sometimes, schemes recommended by Government are really too expensive to be carried out by the local bodies concerned. For instance, if malaria breaks out in a local body area which is enormously large, it is very difficult to control. We have no complaints to make as regards cooperation ; our difficulty is only the putting into effect of the schemes suggested.

Colonel J. A. Manifold : I regard the question of cooperation as largely a personal one. It is a useful suggestion to have local committees where the local health officer and the officer in charge of the local military station may get to know each other. Since our last meeting, I am glad to say that there has been good cooperation between military and

civil authorities especially in the Punjab. And if I might, I would like to read out portions of a letter which I have recently received from one of our officers in the Northern Command. He says :—

> "Up to March 1938, there was only one health cooperation committee in the Command. We now have 13 ; and, in addition, in all these stations in which such committees do not exist, liaison between the S. M. O. and the civil health authorities has been established."

There is another point. The most important results have been achieved, so far, in anti-malaria work and in liaison during epidemics. Most stations report definite civilian cooperation (although much curtailed in scope due to lack of funds) regarding anti-malaria works in land contiguous to cantonments ; while during the recent widespread epidemic of cholera in North India, the committees of Murree, Rawalpindi, Peshawar, Kohat and Bannu were most useful in correlating anti-cholera measures. Regarding the other lines of cooperation, such as, sanitation, control of water, food and building, and anti-sandfly measures the attitude so far of the civil side has been, generally speaking, of a benevolent neutrality. But the growth of this movement must of necessity be slow.

Personally, I should have felt fully satisfied had we merely succeeded in getting as many committees formed this year as we have done, even if we had carried out no concrete cooperation. Actually, the cooperation regarding malaria was fair and that regarding the cholera epidemic far ahead of my expectations. I feel that if we keep working, there is a splendid future for this cooperation movement. In Karachi, the sanitation committee is doing useful work ; in Bombay, the civil authorities are giving every possible help.

I would like to have much more criticism from the medical and public health departments. I would like to quote a few sentences from the last annual report on the health of the Army :—

> "It is the duty of every health officer whether civil or military constantly to bring these facts to the notice of administrative authority, but sympathy must be expressed for the authorities, civil or cantonment, faced often with large populations inadequately housed, inadequately lighted, with insufficient water for cleaning purposes, with little or no surface drainage, with latrine arrangements as described above, and frequently an undeveloped or non-existent (in practice) system of refuse and excreta disposal. The legacy of indifference or ignorance in the past falls heavily on the present generation among whom there is a genuine desire to improve matters, and unfortunately an equally genuine lack of funds. The great majority of the communities concerned in this question are very poor, and without means to finance expensive improvement schemes."

On the other points, we have issued a circular and hope to get fuller details. Half the cooperation will be lost unless the Assistant Director of Hygiene keeps in touch with all Directors of Public Health. If that be done there will certainly be improvement.

Dr. H. R. Rishworth : I agree with practically all the remarks made by Colonel Manifold. The general policy of the railways in regard

to cooperation between provincial and railway medical staff in dealing with epidemics was the subject of comprehensive orders by the Railway Board as far back as 30th September, 1905. These orders form the basis of our procedure in regard to cooperative effort connected with fairs, pilgrimages, construction of lines and major works, infectious and epidemic diseases, inoculation and vaccination. So far, the existing machinery and organisation appears to have worked satisfactorily and in fact our measures in regard to fairs and pilgrimages have often been the subject of commendatory remarks from the civil authorities. All cases of quarantinable infectious diseases occurring on open lines are reported by telegram to the civil authorities of the area including the civil surgeon, the health officer of the district, and to the cantonment executive officer, if the case has arisen within a cantonment area. The medical and executive staff of a railway must cooperate with the local medical authorities in all cases of epidemic disease occurring on a railway, giving early intimation of such outbreak and taking such all steps to meet the emergency as the civil authorities may reasonably require. For lines under construction, a railway must submit to the sanitary authorities of the province a statement showing the sanitary arrangements proposed. The chief medical officer of a railway must hold a Diploma in Public Health and all subordinate staff must have qualifications such as would entitle them to be employed in Government service. I may add that all railway district medical officers with rare exceptions are qualified in public health.

These general measures to ensure cooperation have been usually strictly observed on our side. I am not prepared to deny that there may have been isolated cases where the civil authorities have had reason to complain ; but then, neither have we always been satisfied with the work of the civil authorities.

In regard to the internal sanitary administration of railway centres, this is usually managed by a railway municipal committee financed from railway revenues. Cooperation with contiguous local municipalities is often facilitated by the presence of a railway officer as *ex-officio* member on the local municipal committee. Unfortunately this system fell into disuse in some places during the non-cooperation movement, because the railway officer usually found himself in a minority of one. The time has no doubt come round when the practice will be revived to the mutual advantage of both, especially as railways actually pay large sums in taxes to local bodies.

From the viewpoint of local bodies, the machinery for cooperation with any other committee or independent body is vested in themselves under local Acts. For example, so far as the Central Provinces is concerned, under Section 29 of the Central Provinces Municipalities Act power is given to form joint committees on any matter of common interest, but so far as my knowledge of the G. I. P. Railway and the Central Provinces goes, I do not know of any instance where these powers have been used.

In regard to cooperation between cantonments and railways, I may say that this is usually focussed on anti-malarial measures. The railway medical authorities are keenly alive to the necessity for cooperation in this matter, especially as we are sometimes blamed for conditions which really exist generally throughout the country and not peculiar to the thin cord of territory represented by the railway line. This subject was considered

by the medical section of the Indian Railway Conference Association at Bangalore nearly five years ago and a resolution was passed recommending continuation of cooperation with cantonments in anti-malarial and anti-mosquito measures. Such resolutions under certain conditions are binding on the railways participating in the conference under the terms of the Association, so that cooperation in the matter may now be taken as the expressed policy of the railways. For the purpose of that conference, a questionnaire was addressed to 19 railways and 17 replies were received. It was found that four railways had conducted anti-malaria campaigns in association with cantonments. (G. I. P. ; B. B. and C. I. ; M. and S. M. and E. B. Railways). Others had no occasion to do so. In no case, had a cantonment authority found it necessary to exercise its right to apply to any local self-governing body to compel a railway administration to act under the various Local Self-Government Acts.

In every case the railway administration had complied with paragraph 4 of Railway Board's No. 392 E. G., dated 18th September, 1930. This letter is of some importance in connection with the subject under discussion, and with your permission, I will read certain extracts from it, as they have a bearing on what I wish to say in regard to the draft resolution :—

> "The measures which the military authorities take for the eradication of malaria in cantonments are at present hampered by the fact that they are not coordinated in any way with measures in force in neighbouring localities. In practice it often happens that several different authorities are responsible for carrying out independently anti-malarial measures in different parts of an area. One suggestion which has been made is that joint committees composed of representatives of the various local authorities concerned should be formed in cantonment stations and that these committees should coordinate all anti-malarial measures in and around cantonments. Provision for the formation of such joint committees exists in the various District Board and Municipal Acts, and the Government of India commend the suggestion to the notice of the local Government, who are primarily concerned with it as it relates to a provincial transferred subject. The Government of India will be glad if the local Government will consider whether it is feasible to adopt this or any other suggestion which the local Government may approve for the coordination of anti-malarial work in and around cantonments."

It will be seen from this that machinery already exists for the formation of joint committees and wherever cooperation has not been achieved, it is perhaps because local authorities have not made much use of their powers. The railways have never experienced difficulty in affording co-operation where such cooperation has been sought, nor have they had any difficulty in obtaining representation on such joint committees when formed.

As a result of the above discussion, the following resolutions were unanimously adopted by the Board :—

(1) The Board recommends to all Provincial and State Governments that steps should now be taken by their Directors of Public Health, in

collaboration with the Chief Medical Officers of the various railways, to collect information on the lines indicated in the appendix to the memorandum, as to the nature and scope of those health problems whose solution requires cooperation between the civil and railway health authorities.

(2) The Board recommends to all Provincial and State Governments that steps should be taken to establish combined local health committees in those centres where the health problems of civil, military and railway authorities converge and where cooperative schemes are required for their solution.

ITEM VII.—PHYSICAL EDUCATION COMMITTEE.

The Chairman asked the Secretary to open the discussion.

Colonel A. J. H. Russell : As an essential part of national effort towards improvement of the health and well being of the community, physical education has been given serious attention in many countries, particularly during more recent years. In India, also, this important question has received some consideration, in certain provinces. For instance, the development of courses of instruction in physical education has for some years been encouraged by means of Government grants, whilst, more recently, two Provincial Governments have appointed special committees to report on the whole subject.

The Health Committee of the League of Nations decided some time ago to set up a " Technical Commission whose task it would be to define the physiological bases of rational physical education adapted to different ages." In accordance with a procedure found useful in the study of housing problems, the Health Committee has invited all countries to establish " National Physical Education Committees ". The function of these National Committees, it was considered, would be to ensure the collaboration of every organisation interested in the subject. The Committees would, at the same time, seek coordination in the international sphere through an International Commission (set up by the Health Committee) which would include a representative of each National Committee.

From every point of view, but particularly from that of the health of the people, it is desirable that India should pay more attention to this question and it would be advantageous to this country to collaborate with the work of the League's International Commission. At the same time it must be remembered that most Indian provinces and a number of Indian States include territory and populations which are in extent and numbers the equivalent of many Western countries. For this reason, it would appear unsuitable to attempt to approach the complex problems associated with the subject through a single National Committee for the whole country. Physical culture, in its wider aspects, is intimately associated with such questions as medical inspection of school children, health education, physique and nutrition and, for the initiation of suitable methods of physical education in any given province or State, the departments of education, medicine and public health of the individual Governments would be best qualified to prepare coordinated schemes suited to the populations under their jurisdiction. In other words, organisations for the control, coordination and expansion of all

activities relating to physical culture and education should be based on the varying requirements of individual provinces and States.

Under these circumstances, as a preliminary step it is suggested that the Board might recommend to all provincial and State Governments the constitution of physical education committees whose function would be to advise their Governments as to the steps to be taken to promote physical culture in all its aspects. Once the provincial and State organisations have been constituted and campaigns have been formulated and put into practice, the whole question might be reconsidered at a later date by the Central Advisory Board of Health or by a special committee of that Board. Meantime, it would seem unnecessary to go further. If the Board accepts this suggestion, the Director of the Health Organisation of the League of Nations will be informed of the general position in India and will be placed in touch with such Provincial and State Committees as exist at present and as may come into being at a later date.

The Hon'ble Dr. T. S. S. Rajan : I hold rather strong personal views on this subject. We have in our province already called for a consultative conference of the Minister for Education, the Secretary of the Departments, the Director of Public Health and the Surgeon-General for framing a regular plan of action on this subject. Unless the whole body of educational authorities cooperate with us, it is not possible for the public health department solely to carry out a scheme of physical education. We have a College of Physical Education conducted at Saidapet by the Y. M. C. A. We are also issuing diplomas in physical education, and we have instructed that only graduates from this college should be appointed as physical instructors in educational institutions. In fact, this college serves an All-India need. People come all the way from the Punjab and Burma to this college and the present strength of the college is 150. We have helped the institution by way of buildings and grants, and indirectly we give whatever help possible. It is doing very useful work and the graduates fulfil an important role in the development of physical education. As their number increases, I expect, the physical education problem will assume proper proportions. Unfortunately to-day physical education, as part of the educational curriculum in this province, does not occupy the important place it should. My Director of Public Health has been putting before me schemes for the medical inspection of school boys and asking two or three lakhs for that purpose. Recognising the difficulty of getting funds from the Government, he has drawn up a scheme involving a tax on the parents. Any compulsory physical examination for about 20 lakhs of boys is a huge problem. Supposing we demand 8 annas from each boy, the scheme would be self-supporting. The matter was discussed by members of the Madras cabinet and we have come to the conclusion that this tax would be most unwelcome, particularly in rural areas where parents are not eager to send their children to school. If, in addition to compulsory attendance at school, you demand eight annas from the parents for each boy for this purpose, probably many of the children would not come at all. I have been a medical examiner in my earlier days for a number of educational institutions. I have come to the conclusion that we have wasted a good deal of money on this medical inspec-

tion of school children. We have statistics galore about the number of children attending schools. Statistics show a large number of children, but what is the use of education to those who are physically weak ? Many boys who are now sent to school ought not to be compelled to do so at all. Boys physically unfit to benefit by education have been indiscriminately thrown into the schools under the impression that all boys should receive compulsory education. The result is that either the boys fail in their health or do not benefit by the education. I therefore think that a preliminary examination of all boys that are to be sent to school should be made by a medical man and the boys should be classified as physically fit and physically unfit for education. We may then give the physically unfit boys education of a special type. If you take away the inefficient boys from the crowded educational institutions, you will also make the work of the teachers more useful. We should not put cripples into ordinary schools. Even boys who are mentally defective are now sent and this means wastage both in the institution as well as in the material. If physically fit boys alone are admitted into the schools, the responsibility for their physical well being will be that of the teachers. If a boy develops illness while in school, the responsibility will be that of his teacher. When you tabulate under bad teeth 25 per cent., bad throat 30 per cent. and so on, you can easily make a list of the healthy boys. The next question is this : What are you going to do with the figures ? I really feel that every teacher who is certified as a teacher should have some elementary knowledge of personal hygiene. He must be able to find out bad teeth from good ones and whether a boy is straining with his eyes or not. If the instruction is to be really useful to the boys, the teacher himself must be trained. The educational curriculum for the training of teachers must include a compulsory knowledge of the general health. Every teacher must have this amount of knowledge before he takes up the teaching profession. The subjects for training should include one for testing his capacity for examining boys in regard to their ordinary physical health. If once that is done and if the ordinary ailments are attended to automatically by the teacher it will be easy to get this work done. That is why I was not able to understand how any collection of statistics and the sending of a card to a parent saying that his boy is suffering from so and so would help matters. There is no obligation on the parent to send his boy to a doctor and there is no clinic attached to the school. In the Madras Corporation, there is a condition that the teachers and the boys should be examined by the corporation hospitals free of charge. Even when facilities are available, the parents do not send their children to the hospitals.

A large number of playing fields have been provided but only a very small percentage of the boys avail themselves of them and the teachers, themselves not being enthusiasts, simply drive the boys into the playground and while away their time with something else. Physical education is really an education rather than a medical subject and the Health Board has nothing more to do than laying down a clear-cut principle for the guidance of educational experts.

The second point in regard to this question is this : many boys are too poor to get the food necessary for their healthy normal develop-

ment. The poor parents in rural areas do not feed their boys well. The population in South India, according to Dr. Aykroyd, is the poorest in the whole country, and South Indian food is also the poorest. The boys naturally do not develop into fit human beings. In this connection, Dr. Aykroyd has made investigations into the use of skimmed milk. The milk question raises very big issues, but, for the information of the Board, I can say that last year we introduced a daily ration of buttermilk for jail prisoners. This buttermilk is prepared in the jails themselves. I have called for reports from jail medical officers as regards the practical results of this addition to the diet. I hope to hear that on an average the convicts have put on four pounds in weight. Previously we had over 35 per cent. of the sick in jails suffering from digestive troubles. Chronic dysentery has disappeared and they tell me that the percentage of gastric ailments has come down 35 per cent. Having this in view it is possible for the Government to start a scheme of giving buttermilk to the boys at certain hours of the day, provided the buttermilk can be prepared with sufficient purity. This costs a good deal but we have made a provision of Rs. 65,000 for supplies of buttermilk. We can control its preparation and watch the results. Instead of concentrating on a scheme of skimmed milk, therefore, we have this alternative suggestion. We can prepare buttermilk locally and give it to the school children and thus get over vitamin deficiencies. This will also be cheap ; cheaper even than milk. I even venture to think that it will be much better than the skimmed milk suggested by Dr. Aykroyd.

As people interested in the general health of the population, I suggest that educational subjects should include a qualification in health, an ordinary qualification just enough to know what is sanitarily good and what is bad. I suggest that compulsory instruction in hygiene should form part of schools' curricula. When once this is done and it is supplemented by some provision for playgrounds and for buttermilk, we get a scheme which, if worked well, should give tangible results in the course of a few years. The result of school inspection is known to us from existing records. The next step is to evolve a proper technique to deal with the physical health of our boys as revealed by these records After collecting information, we must proceed to deal scientifically with the situation. After medical inspection of school children we must take the next logical step and make up deficiencies in diet and have a national and compulsory health education scheme for teachers and boys.

The Hon'ble Dr. M. D. D. Gilder : As far as the Bombay Government is concerned, we are moving fast. In respect of physical education, we have already taken action on the report of our Physical Education Committee. We have already established a school at Government cost and the Government have granted to the school a large area of land. In two years some hundred graduates have been given a training in physical education. These men will ultimately be employed as teachers. Apart from this regular training, there are two courses of three months which every teacher employed in a primary or secondary school attends in order to acquire a knowledge of physical education from the teachers' point of view. Every teacher employed in a primary or secondary school should have this training.

As regards the University, it has made the medical examination of all the students in its colleges compulsory. An effort has also been made to introduce complsory physical education for the students. We have provided in next year's budget a grant for the medical examination of school children. As far as the city of Bombay is concerned, not only is there medical inspection of school children, but a school clinic has also been established where the children are taken during school hours in municipal ambulances for the necessary attention. In the municipal hospitals, special officers have been appointed to look to the needs of the school children. The scheme has not yet been fully developed, but I think at the present moment, as far as the city of Bombay is concerned, half the children are now being attended to in this way. As regards rural areas, we have made it compulsory for our subsidised doctors to make the medical examination of the village school children. Some 200 such doctors have already been appointed and some 250 more will be appointed at an early date.

As far as defective children are concerned, we are proceeding in a different way. Lately we have appointed a committee and it is now working under the Minister for Health. Defective children in the city of Bombay will all be taken to a special institution and there they will be further examined and put into one of two categories. One will be given some general education and the other will receive technical education. Already a certain amount of money has been collected by public subscription and a non-official committee has been appointed to collect more funds for this purpose.

In respect of organised games and so on, we have taken the matter in hand and we have under consideration whether a certain period of school hours should not be compulsorily set apart for physical education, both individual and organised. Opinion is strongly held that the leisure time of the boys should not be curtailed for this purpose.

As regards food supply, the Bombay municipality has already voted more than Rs. 50,000 per annum for supplying milk to children whose nutrition is defective We have also got certain communal organisations working in the same direction. For instance, the Parsi community is looking after its own educational needs and its organisation supplies free meals to school children who are under-nourished. The Government of Bombay are proceeding along these lines and are hoping to extend these services in succeeding years.

The Hon'ble Mr. B. Dube : Although not much has been done in our province, since the two portfolios of Education and Health are in the hands of one Minister there are facilities for doing something more. As the Hon'ble Dr. Rajan has remarked education in hygiene should be made compulsory. With that idea, we have formulated a scheme whereby we propose to have one teacher or doctor in each school imparting instruction in hygiene and we also propose to make this subject compulsory in all educational institutions. That is the one improvement we are going to make so far as the physical training of students is concerned

As regards physical training proper, there is one training institution in the town of Cuttack to which Government have granted substantial sums. Both grown-ups and children attend and we are laying

out playgrounds. Recently the municipalities have allotted funds for laying out playgrounds for children. I am strongly in favour of giving physical education to our boys and am contemplating a graded system of physical training for primary, secondary and college classes. So far as the question of dietary is concerned, we are providing something for the poorer classes of school children.

The Hon'ble Mr. Tamiz-ud-din Khan : In Bengal, this work has been taken up by the education department, although it is not easy to decide which department should undertake it. In order to suggest fuller cooperation between these departments, the draft resolution may be amended by putting in the words 'which should include representatives of both Education and Public Health departments and prominent non-officials' after the words 'Physical Education Committees'. This will remove a good deal of misconception and will ensure the necessary cooperation

Colonel G. Jolly : I do not think my Government thought that this discussion would be as extensive as it has been. They recognise fully the need for developing physical education and have gone a long way to organise games for general physical education. They have decided that the medical aspect of the question may be dealt with by their Advisory Board

As a result of the above discussion, the following resolutions were unanimously adopted by the Board :—

(1) The Central Advisory Board of Health, while conscious of the necessity for the constitution at an early date of a National Physical Education Committee on an all-India basis, recommends in the first instance to each Provincial and State Government the desirability of establishing Physical Education Committees for the coordination of all activities designed to promote the physical culture and physical well-being of the people in their territories.

(2) The Board further recommends that all teachers should be given instruction in hygiene and that instruction in the same subject be given in all schools ; that medical examination of all children before admission to school should be introduced ; and that the formulation of suitable detaries for school children should be investigated.

ITEM VIII.—REPLIES RECEIVED FROM PROVINCIAL GOVERNMENTS IN REGARD TO RESOLUTIONS PASSED BY THE BOARD IN 1937 ON ORGANISATION OF PROVINCIAL PUBLIC HEALTH DEPARTMENTS.

The replies which were circulated before the meeting to all members of the Board were noted (Appendix VI)

ITEM IX —OTHER BUSINESS

The Chairman : If I understood Dr. Rajan aright, he wished to make a suggestion at this stage and he may do so now. I think it might be taken up as a subject for discussion at the next meeting of the Board.

The Hon'ble Dr. T. S S. Rajan : We have introduced in a number of districts in this province a prohibition programme and we

hope to make the province completely dry in course of time. The University of Madras has sent out a number of students with the Professor of Economics to investigate the economic result of the introduction of prohibition. They have produced a brochure containing valuable suggestions with regard to the economic condition of the people in prohibition areas. I suggest to this Board that a health survey in these areas be undertaken because, from the reading of the economic report, I have every reason to believe that it will indicate improved health conditions among the people after prohibition has been introduced. If such a survey is made, such diseases which are produced as a result of drunkenness can be detected and dealt with. Investigations may also be made as to the average length of life among persons addicted to drink and, if they are not addicted to such a habit, if they are free from diseases caused by drink. Such a survey would make a fine contribution to the health literature of this province. If I remember right they have introduced prohibition in Bombay in a large number of places and also in Bihar, whilst in Orissa they are contemplating the introduction of similar legislation. We as a Central Health Board should be interested in the results of this experiment and it would be of considerable advantage to have such knowledge. Moreover, it will be a great lesson not only to us in India but to all nations of the world. On the evidence of the economic progress made in the prohibition districts, I suggest that those areas will be valuable fields for investigation of health conditions of the people. I want to suggest that this Advisory Health Board should ask local Governments who have introduced prohibition to make a survey of public health conditions. This is the first proposition I wished to make.

Secondly, the Madras Government has launched a large programme for the provision of protected water supplies in all rural areas. When we started to dig wells in certain areas in our province, we found fluorine in the water which is otherwise quite suitable, and it has been shown that where the water contains a certain percentage of fluorine. pathological conditions appear. Similar investigations have been made in America and the conclusion has been reached that the presence of fluorine in water is not conducive to the general health of the people. In view of the extensive programme of protected rural water supplies being launched in the coming year, the presence of fluorine in the water has become of considerable importance. It is not as if the Madras Presidency alone is interested. The presence of fluorine in water is really a menace to health and it ought to be investigated properly. There is one redeeming feature, *viz.*, that fluorine does not actually kill the people straightaway and it is not as dangerous as epidemic disease. What happens is that it produces a chronic state of illness and the individual becomes quite unfit at a certain stage. So far as our knowledge goes, even animals drinking such water suffer in much the same way. This matter should, therefore, be investigated and the Advisory Board of Health should formulate a resolution on the results brought to their notice.

A third point to which I would refer is this : we have been carrying out chlorination of water and at a certain stage the water becomes quite unfit for use because of the smell. Experiments have shown that one part per million will give complete protection against any infection and

does not give the objectionable features which overchlorination produces. This experiment has been carried on in Trichinopoly for the last six months, the chlorine being introduced under pressure and not by the usual quantitative system. We are more or less satisfied that wherever high pressure is available and wherever electricity is introduced for pumping water a small minimum concentration is sufficient to give absolute protection and at the same time it prevents any complain which overchlorination causes. That is another matter on which I think the Board should broadcast information.

The Chairman : I think the Madras Government should send us a note and we could circulate that for the information of all provincial Governments.

As a result of the above discussion, the following resolutions were unanimously adopted by the Board :—

(1) The Board considered a proposal made by the Hon'ble the Minister for Public Health in Madras that in areas where prohibition had been introduced the Provincial Governments should conduct health surveys in order to ascertain the effects of the new policy on the health of the populations in these areas.

The Board commends this proposal and suggests that the outcome of these investigations be presented in accordance with the rules of procedure already adopted by the Board.

(2) The Board also considered a proposal made by the Hon'ble the Minister for Public Health in Madras that the problem associated with the presence of fluorine in water supplies was one suitable for investigation.

The Board suggests that the provinces concerned should make such investigations and present the results at the next meeting of the Board.

(3) The Hon'ble the Minister for Public Health in Madras referred to recent experiments carried out in Trichinopoly in connection with the chlorination of water. The Hon'ble Minister agreed to send to the Secretary a note on this subject which the Board decided should be circulated to all Governments for information.

The Chairman turning to Dr. Rishworth : We want to take advantage of item No. IX on the agenda and to ask you whether it is possible for you to ensure, at least on your own line, that the milk that we buy when travelling, is pure. As you have full control and license the people who sell milk on station platforms, can you say whether these supplies are satisfactory or not ?

Dr. H. R. Rishworth : We have an intensive system of inspection of food stuffs, both as regards quality and storage, by trained sanitary inspectors. Refreshment rooms, stores etc., are all inspected at definite intervals and reports are sent to higher authorities. Refreshment cars are also inspected and we welcome complaints from passengers in regard to the quality of food supplied. If any adulteration or other fault is detected, the people in charge and the suppliers are heavily punished. We have developed a system by which the attention of the public health authority at headquarters is drawn to faults and the food supplied at stations is subjected to analytical test

at intervals. In regard to milk, I am not able to say that it is as perfect as pasteurised milk in Western countries, but I can assure you that the quality of milk supplied at stations is in no way inferior to that of the milk supplied in bazaars.

The Chairman : I propose to take up this matter with the Railway Board when I return to Delhi.

Colonel G. Jolly : The problem of the maintenance and treatment of lepers in the Punjab has recently come under review by the Punjab Government and it has been demonstrated that less than one-third of all lepers maintained in our leper institutions are domiciled Punjabis, while more than two-thirds are persons domiciled in other provinces or in States. For the maintenance of 682 lepers, a sum of Rs. 60,826 was expended last year by the Punjab Government in grants to five leper homes. Of this sum, Rs. 29,799 was expended on the maintenance of domiciled Punjabis, while the remaining Rs. 41,027 represented the cost of maintaining non-Punjabi lepers. The Government cannot continue indefinitely to maintain large numbers of non-Punjabi lepers. They, therefore, propose that a reciprocal agreement be made between different provincial and State Governments under which any leper admitted to a leper institution of a province or State in which he is not domiciled shall either be returned to his own province or State, or alternatively that province or State shall pay the cost of his maintenance in the leper institution to which he has been admitted.

The Hon'ble Dr. M. D. D. Gilder : Our problem is exactly the same. We are inundated from outside with lepers who crowd round the bazaars. The total number of lepers in the various leper homes has also increased enormously. We have written to the various provinces from which these lepers come and also to the Government of India, but no action in the matter has been taken. This is a matter of considerable importance. We have tried returning some of these lepers to their own provinces but they have quickly returned because of indiscriminate charity. We are asking the British Empire Leprosy Relief Association to introduce legislation for the control of these people or for their deportation, if the former is not possible. I think something should be done in the matter.

The Chairman : This is a very important matter. Suppose we appoint an *ad hoc* committee to prepare a special report on leprosy and its control in India. If the constitution of the committee is left to me I shall appoint one from amongst the members of this Board and they might be able to present a report to the next meeting. Does this meet with the approval of members ?

The Hon'ble Dr. T. S. S. Rajan : This is perhaps a more pressing problem in our province than anywhere else. We have taken certain measures and I have also made certain proposals of an all-India nature. These have been examined by a number of leprosy specialists and they have expressed their views. In view of the infectious nature of the disease, the question is of all-India importance and it is worth while considering whether we could not adopt an all-India policy in this matter.

The Chairman asked :—Is it the general feeling of the Board that we should have an *ad hoc* committee ? The terms of reference will be "Leprosy and its control in India".

As a result of the above discussion, the following resolution was unanimously adopted by the Board :—

The Board agreed that an *ad hoc* committee should be appointed by the Chairman to prepare a special report on leprosy and its control in India.

In regard to the submission of items to be placed on the agenda for the next meeting of the Board, the Hon'ble Minister for Public Health in Bombay urged the desirability of Provincial and State Governments establishing at suitable centres laboratories for the free examination of clinical material from cases of infectious disease sent either by a medical practitioner or by a Government medical officer. The Board decided that this proposal should be commended to the attention of all Governments and suggested that it might form the subject of reports to be discussed at the next meeting of the Board in accordance with the usual procedure.

The Chairman : I think that perhaps this will be the last meeting which Colonel Russel will attend as Secretary to the Board and I hope I have your approval in conveying to him our thanks for all the assitance he has given to the Central Advisory Board of Health since its establishment about two years ago. The memoranda which have been circulated to the members of the Board have been of the greatest use in our discussions, and on behalf of the members of the Board I would like to convey our thanks to Colonel Russell for the assistance he has given.

The Hon'ble Dr. T. S. S. Rajan : In heartily endorsing the recognition of the work rendered by Colonel Russell as Secretary of the Central Advisory Board of Health, I am afraid I shall be adding to his troubles by the suggestion that I am going to make, but I believe it is worth while making. The two days we have had have been inadequate for full discussion of the subjects before us. Subjects such as the distribution of quinine, malarial policy, plague and its prevention, tuberculosis, leprosy and a host of other matters have been left out of account in our discussions, although from a health point of view they are equally important if not more important than those which have been discussed. Colonel Russell rightly complained that, even with the limited number of subjects dealt with by us, he had found it difficult to prepare the material for the Board. I recognise his difficulty and suggest to the Chairman whether he could not possibly give him some more assistance, so that we may in future have the opportunity of discussing more subjects, making more investigations, etc., so that the Central Advisory Board of Health may be a live, permanent organisation, continually working from year's end to year's end and maintaining constant communication between the Provincial Governments and the Central Government on such an important matter as public health. This is a matter for your consideration, but I felt I should make this statement. The discussions we have had have been inadequate, as the time at our disposal has been too short. I suggest that the time for discussion may be increased to three days, if possible, next time, and

that the subjects for discussion may be amplified and such adequate help as may be necessary for the elaboration of the agenda may be given to the Secretary of the Board.

I entirely endorse the feelings of the Chairman, and personally, on behalf of the Madras Government and of myself, I tender my heart-felt thanks for the opportunity which the Central Board has given to this Government to welcome the Board members and make their stay here as pleasant as possible. I am afraid we have not been very good hosts, but I assure you that poor as we are, we have been earnest in doing our best. I would also thank the Chairman of the Board for his kindness in allowing the present meeting to be held in Madras.

The Chairman : I think I shall be conveying the sentiments of the members of the Board if I thank the Madras Government and the Hon'ble Dr. Rajan for the hospitality we have enjoyed. I think Dr. Rajan is too modest in saying that the Madras Government have not shown sufficient hospitality to us. They have given us an opportunity of coming to this province which, I think we all recognise to be in the forefront of public health activities. I think we have learned a great deal during the discussions. I for myself have listened to the exposition of what is being done in Madras and in the other provinces with the greatest possible interest. I have also taken note of what the Hon'ble Dr. Rajan said as regards the extension of the time of these meetings and also in regard to the number of subjects which we should discuss. Here, however, I would like the Hon'ble Ministers to assist the Centre ; if they will kindly send their proposals well in advance with adequate memoranda, I am sure they will not find the Centre unwilling to cooperate.

The Hon'ble Dr. T. S. S. Rajan : I am afraid it is likely that Colonel Russell will be leaving us in the course of the year. Probably the next meeting of the Board will be conducted by his successor. By giving us an opportunity to have this Board meeting here, he has given me the opportunity to tender to him, on behalf of the Madras Government and myself, our heart-felt gratitude to him for all the valuable services which he has rendered both as the Public Health Commissioner of the Government of India and,—more so,—as the Director of Public Health in our own province. We cannot easily forget the energy, the enthusiasm and the push with which he has really got this province to the standard in which we find it to-day. And it would be very ungrateful of me if I did not acknowledge his services to this Government on this occasion, particularly in view of the fact that he will be leaving us very soon.

The meeting then terminated.

RESOLUTIONS.

Item I.

CONFIRMATION OF THE PROCEEDINGS.

The Board resolved that the meetings of the Central Advisory Board should be held in turn at different important centres in India.

Item II.

MATERNITY AND CHILD WELFARE *ad hoc* COMMITTEE REPORT.

The Central Advisory Board of Health, in adopting the report of the Special Committee on Maternity and Child Welfare work in India. expresses its thanks to the Committee for the able manner in which it has carried out its task.

In recommending the report to all Provincial and State Governments for their detailed consideration, the Board desires to invite special attention to the following recommendations which it considers fundamental to the development of sound maternity and child welfare schemes in this country :

(1) The appointment in each province or State of a senior woman medical officer having special qualifications and experience in maternity and child welfare work.

(2) The appointment of specially trained women doctors to take charge of maternity and child welfare schemes in municipal and local board areas and to conduct the prenatal and postnatal clinics in the welfare centres.

(3) The provision of greater facilities for the training of medical students and midwives in prenatal and postnatal work. This implies the provision of well-organised prenatal and postnatal clinics in all teaching hospitals.

(4) The preventive aspect of maternity and child welfare centres is primary and it is most important that this be kept always in mind. These centres should not assume the functions of a hospital or dispensary. It is recognised that the corollary to this recommendation is the provision of greater numbers of rural dispensaries and of rural medical officers.

(5) The urgent necessity for further research into the causes of maternal mortality and morbidity ; to this end public health departments and particularly their maternity and child welfare staffs should help by carrying out investigations into these subjects.

(6) Well-organised maternity and child welfare schemes should be eligible for Government grants-in-aid, as these not only stimulate local bodies to improve their services but give public health departments a measure of control and supervision which the report shows to be urgently necessary.

Item III.

INDIAN VITAL STATISTICS.

(1) The Central Advisory Board of Health is of opinion that improvement in the registration, collection and compilation of vital statistics

is urgently desirable, as these records constitute the basis for all epidemiological and other public health activities. The Board considers that one of the first steps should be reduction of the present large numbers of omissions in the records of births and deaths. This depends to a great extent on the appointment of district and municipal health officers and other health staffs and on these officers and their staffs devoting more time to the supervision of registrars, to the inspection of birth and death registers and to the detection of unregistered vital events. The Board also considers that inspecting officers of other departments should take a greater interest in the improvement of village vital statistics

(2) The Board recommends the employment of medical registrars in large cities and considers it desirable that minimum educational qualifications should be prescribed for persons holding the post of registers in other areas. It also sugegsst that candidates for such posts should before appointment undergo an instructional course.

(3) As regards compilation work, the Board believes that this can be carried out most expeditiously and economically in the office of the Director of Public Health and invites the attention of all Governments to the centralised schemes now in force in Madras Presidency and in Mysore State.

(4) The Board recommends the establishment of an organised bureau of vital statistics under the charge of a trained medical statistician in the headquarters office of every Provincial and State Public Health Department

(5) The Board. recognising the importance of obtaining more accurate records for international purposes, recommends that every Provincial and State Government should collaborate to the fullest possible extent with the Central Government's Public Health Department in respect of epidemiological and other vital statistical information.

(6) The Board considers that it would be of advantage if public health departments could obtain information in respect of "the age of the mother" and of "the number of the pregnancy" in relation to each registered birth and suggests that in selected areas attempts should now be made to collect these figures in order that the data so collected could be correlated with the material which will be available from the 1941 census.

(7) The Board is of opinion that statistical studies in the fields of medicine and public health should be pursued with greater vigour and stresses the necessity for additional trained medical statistical workers.

Item IV.

CONTROL OF SPREAD OF CHOLERA.

(1) The Central Advisory Board of Health desires to invite the attention of all Governments in India to the recommendations made in the various Pilgrim Committee Reports prepared during 1913—16 and stresses the importance of implementing the recommendations contained in these reports, particularly in connection with the control of cholera.

(2) The Board expresses the emphatic opinion that all medical and public health departments should ensure that the supplies of anti-cholera

vaccine employed are prepared from the true *V. cholerae*, so that inoculation will continue to give a high degree of protection.

(3) The Board further recommends that each Provincial and State Public Health Department should draw up definite and detailed plans for the sanitary control of all festival centres in their territory and that these plans should include clear instructions for the guidance of local officers responsible for the sanitation of individual festivals and of the routes likely to be used by the pilgrims.

(4) The Board recognises that control of the festival centres themselves is not likely to give complete protection from the danger of cholera and recommends the more general provision of protected water supplies and of adequate conservancy measures, particularly along the routes used by pilgrims

(5) The Board, having discussed the question of protection conferred by anti-cholera inoculation, recommends that the possibility of introducing a system of compulsory inoculation of all pilgrims be examined by a sub-committee of the Board and that a report on this matter be submitted at the next meeting.

(6) The Board recommends close cooperation between the public health departments of neighbouring provinces and States in respect of any special precautionary measures which may be prescribed and particularly in regard to the cancellation of, or prohibition of attendance at, a festival because of the danger of epidemic disease. The Board further suggests that local health officers in their respective provinces and States should make mutual arrangements for the rapid interchange of up-to-date and exact information regarding all outbreaks of epidemic disease.

Item V.

PUBLIC HEALTH ORGANISATIONS.

(1) The Central Advisory Board of Health again invites the attention of all Provincial and State Governments to the recommendations on the subject of Public Health Organisations made at its meeting in June, 1937.

(2) In agreeing with the resolutions passed by the Java Rural Hygiene Conference on this question, the Board stresses the desirability of establishing in each province and State an Advisory Board of Health with the Minister in-charge as Chairman and of constituting Health Committees at suitable centres and a well-organised public health department with qualified health officers and a suitable subordinate staff.

(3) As regards the necessity for bringing medical and public health services as near to the people as possible, the Board recommends that all public health departments should study the " Health Unit " schemes now in force in certain provinces. The expansion of the activities of these Health Units to wider areas and larger populations is a question which deserves serious consideration by all Provincial and State Public Health Departments.

(4) The Board recommends that every province and State should take steps to provide itself with a consolidated Public Health Act which will cover adequately every part of the field of public health.

Item VI.

COOPERATION IN PUBLIC HEALTH MEASURES

(1) The Board recommends to all Provincial and State Governments that steps should now be taken by their Directors of Public Health, in collaboration with the Chief Medical Officers of the various railways, to collect information, on the lines indicated in the appendix to the memorandum, as to the nature and scope of those health problems whose solution requires cooperation between the civil and railway health authorities.

(2) The Board recommends to all Provincial and State Governments that steps should be taken to establish combined local health committees in those centres where the health problems of civil, military and railway authorities converge and where cooperative schemes are required for their solution.

Item VII.

PHYSICAL EDUCATION COMMITTEES.

(1) The Central Advisory Board of Health, while conscious of the necessity for the constitution at an early date of a National Physical Education Committee on an all-India basis, recommends in the first instance to each Provincial and State Government the desirability of establishing Physical Education Committees for the coordination of all activities designed to promote the physical culture and physical well-being of the people in their territories.

(2) The Board further recommends that all teachers should be given instruction in hygiene and that instruction in the same subject be given in all schools ; that medical examination of all children before admission to school should be introduced ; and that the formulation of suitable dietaries for school children should be investigated.

GENERAL.

(1) The Board considered a proposal made by the Hon'ble the Minister for Public Health in Madras that in areas where prohibition has been introduced the Provincial Governments should conduct health surveys in order to ascertain the effects of the new policy on the health of the populations in these areas.

The Board commends this proposal and suggests that the outcome of these investigations be presented in accordance with the rules of procedure already adopted by the Board.

(2) The Board also considered a proposal made by the Hon'ble the Minister for Public Health in Madras that the problem associated with the presence of fluorine in water supplies was one suitable for investigation.

The Board suggests that the provinces concerned should make such investigations and present the results at the next meeting of the Board.

(3) The Hon'ble the Minister for Public Health in Madras referred to recent experiments carried out in Trichinopoly in connection with the chlorination of water. The Hon'ble Minister agreed to send to the Secretary a note on this subject which the Board decided should be circulated to all Governments for information.

(4) The Board agreed that an *ad hoc* committee should be appointed by the Chairman to prepare a special report on leprosy and its control in India.

(5) In regard to the submission of items to be placed on the agenda for the next meeting of the Board, the Hon'ble Minister for Public Health in Bombay urged the desirability of Provincial and State Governments establishing at suitable centres laboratories for the free examination of clinical material from cases of infectious disease sent either by a medical practitioner or by a Government medical officer. The Board decided that this proposal should be commended to the attention of all Governments and suggested that it might form the subject of reports to be discussed at the next meeting of the Board in accordance with the usual procedure.

APPENDIX I.

Memorandum on Indian Vital Statistics (with three enclosures).

1. In presenting a memorandum on this subject for discussion by the Central Advisory Board of Health, it has been deemed unnecessary to enumerate the many arguments which could be cited in favour of the value of reliable vital statistics. It has instead been presumed that every member of the Board would already hold the opinion that these statistical records constitute the very foundation of all constructive work in the public health field. Lest there be any doubt on the subject, however, it may be recalled that the reports of the Royal Commission on Agriculture and of the Royal Commission on Labour both drew pointed attention to the defects of Indian vital statistics and stressed the importance of effecting their early improvement, in relation both to the rural villager and to the industrial worker. The subject of the improvement of vital statistics was more recently discussed at the Java Intergovernmental Conference of Far Eastern Countries on Rural Hygiene. A resolution of that Conference reads as follows:

> "As ultimately the preventive and curative work must be organised on a basis of accurate knowledge of the diseases and disabilities in an area, the importance of collecting accurate vital statistics cannot be over-emphasised. Our knowledge of morbidity in wide rural areas is very insufficient and it is therefore essential that every effort should be made to increase and improve it."

In considering the Java report, the Government of India, in their letter No. F. 37-22/37-G., dated 9th July, 1938, to Provincial Governments, suggested that the possibility of securing improvements in these statistics would seem a suitable subject for discussion by the Central Advisory Board of Health.

The succeeding paragraphs of this memorandum indicate how much remains to be done before the recommendations of the two Royal Commissions can be said to have been adequately implemented and before our knowledge of the morbidity, disability and disease in the rural areas of this country can be said to be either sufficient or accurate.

2. Although the first enactment providing for the recording of vital statistics was entitled the Registration of Births, Deaths and Marriages Act, registration of these events in India has been and is confined to births and deaths; registration of marriage does not exist as a civil institution for either the Hindu or Mohammedan communities, which together form about 94 per cent. of the total population. The practice of notification of infectious diseases varies from province to province, as may be seen from the lists given in Enclosure 1, but cholera, smallpox and plague are everywhere notifiable and the figures relating to these three diseases are much more reliable than those of any others.

Agencies used for registration; methods of compilation.

3. Whilst the different provinces of British India show some variation with respect to the agencies responsible for the registration and for the compilation of vital statistics, the salient features of the systems in force are much the same throughout the country. In municipalities, the local authority is usually made responsible, but, in some provinces such as Bengal, smaller local self-government units, such as union boards, have been entrusted with this task. In regard to rural areas, the village watchman is the usual reporting agent. In Northern India generally, the *thana* or police station officer is the registrar, whilst in Madras Presidency the village headman takes the place of the *thana* officer and control of registration is primarily in the hands of the revenue department.

In this connection, one point requires notice. In those provinces where the police are responsible for registration, the reporting of vital events from the constituent villages of a *thana* is limited to particular days of the month,—in some cases once a week and in others once a fortnight,—on which the village *chaukidars* or watchmen attend the police station to which they are attached. In consequence, births, deaths and cases of infectious diseases are frequently attributed to dates much later than the actual dates of occurrence. On the other hand, when the village headman is the local registrar, the recording of events may be expected to take place more promptly.

Two other sub-agencies for registration of vital statistics remain to be mentioned. In tea gardens and railway colonies, vital statistics are collected by the gardens and railway authorities and are later reported to the appropriate civil authority.

Village or *thana* returns in most provinces pass through a number of intermediate agencies before they reach the Director of Public Health. In many areas, district returns are compiled in the civil surgeon's office, whilst in Bengal this work is done in the office of the district health officer. Madras is the only province in which individual village returns are sent to the office of the Director of Public Health, where a special establishment exists for the compilation of provincial figures. This centralised organisation has, it is understood, gone far to eliminate those sources of error which are bound to arise where a number of intermediate agents are concerned. It has, at the same time, enabled the central office to exercise more strict control over the returns both as regards punctuality and completeness.

In this preliminary paragraph, the systems of registration and methods of compilation in force have been described in the barest outline. A summary giving details for individual provinces is attached (Enclosure 2).

Sources of Error.

4. Errors in respect of Indian vital statistics may be classified under three heads:—(1) defects in registration, (2) errors of compilation, and (3) errors of presentation in official public health reports. Special enquiries conducted in different parts of the country have brought to light various sources of error with respect to the first two heads, whilst provincial health reports themselves provide instances of the third. These three sources of error will now be considered *seriatim*.

Defects in Registration.

5. These include:—(1) omission of large numbers of births and deaths; (2) omission of cases of infectious diseases; and (3) failure to record correctly the cause of death.

Births and deaths.—Failure to register births and deaths is a feature common to all parts of the country. From the beginning of the present century the recorded birth rate of British India has kept remarkably steady at approximately 35 per mille, but the correct crude birth rate may be reckoned to be in the neighbourhood of 42 per mille, since available evidence would indicate that as many as 15 to 20 per cent. of the actual births are not recorded in the birth registers. It is in fact still not uncommon to find, in certain rural towns, recorded birth rates as low as 10 per mille, in some cases these rates may be even as low as 5 per mille.

Within more recent years provincial public health departments have made an effort to improve the vital statistics of their provinces by the detection and recording of unregistered births and deaths. The following statement shows the total numbers so detected during 1936, excluding the North-West Frontier Province, United Provinces and Ajmer-Merwara and the municipalities of the Punjab, as classified figures were not available in these areas. The figures are given separately for municipalities and rural districts and have been arranged in two groups, (1) areas having health officers and (2) areas without health officers.

	Municipalities.		Districts.	
	Births.	Deaths.	Births.	Deaths.
(1) With health officers . .	15,881	7,109	69,361	21,735
(2) Without health officers . .	3,426	1,902	13,012	7,362

It may be recalled that, according to available information, nearly half the districts and three quarters of the municipalities in British India still are without qualified health officers; it follows that the total populations included in the first group are only a fraction of those in the second. Nevertheless, the numbers of births discovered in urban and rural areas which have health officers are nearly five times as large as those detected in those areas where no health officers are employed. With respect to deaths, the disproportion is equally striking. Errors to improve registration are not, moreover, being pursued with equal vigour in every province. As will be seen from the following statement, Madras Presidency contributed by far the greatest share to the numbers given above in respect of both births and deaths. It is to be noted that the 'nil' entries under districts is due to the fact that no district in Madras Presidency is without a health officer.

Madras Presidency.

	Municipalities.		Districts.	
	Births.	Deaths.	Births.	Deaths.
(1) With health officers . .	10,553	6,331	46,857	14,059
(2) Without health officers . .	1,351	1,030	*Nil.*	*Nil.*

6. *Infectious diseases.*—Generally speaking, it may be said that no infectious diseases except cholera, smallpox and plague are reported from rural areas. Few reports are ever made of other diseases, except when an extensive epidemic has been in progress for some time and the people have become familiar with its particular manifestations. For instance, when relapsing fever swept over several districts of Madras Presidency some years ago, it was only during the later stages of the epidemic that prompt notification was made of its presence. In urban areas, the existence of a public health organisation and of facilities for diagnosis and treatment by medical institutions and by general practitioners should make the reporting of infectious disease more practicable, but even in the larger towns the recorded figures can seldom be accepted as a correct index of the prevalence of infection. A brief perusal of the lists included in Enclosure 1, will make obvious the extraordinary variations to be found in the diseases made notifiable in different parts of India.

Under present circumstances, it would be a futile task to try to estimate the degree of error in the recorded figures for general infectious diseases. It may, however, be safely assumed that with respect to cholera, smallpox and plague, with which both villagers and townsfolk are familiar, the error is much smaller.

7. *Causes of deaths.*—As regards improvement in the registration of causes of deaths, several factors go to make any rapid advance impossible. In the first place, medical certification alone provides the real basis. The concentration of medical men in the larger cities and towns and their shortage in rural areas prevent, however, any extension in the near future of medical certification to the villages. Secondly, the present grouping of causes under such large heads as "respiratory diseases", "fevers" and "other causes" results in the non-differentiation of many varieties of different diseases, although it is impossible to plan any more detailed classification so long as registration lies in the hands of illiterate village headmen or *chaukidars.*

At the same time, it must be pointed out that, although medical registrars have been employed for years past in provincial capitals, such as Calcutta, Bombay and Madras, improvements in the classification of causes of death in those areas have been much less evident than might have been expected. Without going into detail, it can be stated that special inquiries into particular health problems have revealed wide disparity between municipal figures recorded by the medical registrars and those obtained during these inquiries. This failure to effect improvement may perhaps be explained in part by the fact that in most cases the medical certification is not done by a doctor in attendance before death and that the registrar is compelled to deduce a probable cause of death from inquiries made by himself. In addition, the number of medical registrars is insufficient to permit them to carry out effective enquiries in respect of all deaths. Finally, an uniformed public, largely indifferent to the value of correct vital statistics, gives little assistance to the health authorities in their efforts to reach a reasonable degree of accuracy.

Errors of Compilation.

8. An investigation carried out by the Madras public health department some years ago showed that, in a certain district, the monthly statistical returns in actual fact contained figures only for 25—35 per cent. of the 1,664 villages included in that district and these returns were being submitted as complete district records. With gross defects of this nature, it was not surprising to find that the birth and death rates should be as low as 11.7 and 9.1 per mille. A further common source of error is for Union Boards, which generally include several revenue villages, to omit the statistics of one or more of these villages from their returns

Another type of error is met with in rural areas where the police are responsible for registration. The *thana* figures are compiled from records furnished by the village *chaukidars* which, as the Director of Public Health in the United Provinces states, "constitute the sole permanent record to which reference can be made for proof of a particular birth or death". In connection with an investigation made during 1929, that officer remarked that "in view of the existing procedure requiring the *chaukidars* to submit their preliminary records at the *thana* only twice during a month on fixed dates, the births and deaths of the latter half of a month were as a rule submitted at the police stations in the next month and recorded in the *thana* registers as occurrences for that month. It was calculated that 31·5 per cent. of the occurrences for any month were in this manner actually recorded as occurrences for the next month;" and again, "when a *chaukidar* was unable to attend the *thana* on the date fixed, the entries furnished by him were recorded in the *thana* registers as occurrences for the month in which they were furnished", even though the interval might be two, three or four months. The Director of Public Health added that, although the Inspector General of Police issued instructions to his subordinate staff for the rectification of these defects, he himself felt that, owing to their other heavy duties, no permanent improvement had taken place.

These are serious sources of error and it is not unlikely that similar errors are present in the vital statistics of other provinces where the same system is in force. In general, it may be said that the more numerous the intermediate stages are before the figures finally reach the Director of Public Health's office, the greater are the chances of errors in compilation.

Errors of presentation in public health reports.

9. Whilst in recent years provincial reports have included estimated populations for the year under review, in most cases the calculation of mortality rates for specific age-periods and for the two sexes continues to be based on the figures of the previous census populations. The error introduced by use of the census figures increases steadily as one passes from the earlier to the latter years of the inter-censal decade. It is true that in India the records of deaths by age and sex are not sufficiently correct to enable accurate estimates of population to be made. At the same time, during an inter-censal period, variations in the percentages of population contained in the different age and sex groups are not likely to be great, so that it should be possible to distribute the total

estimated population into those different groups in the proportions shown in the census enumerations. These distributed figures can then be used for calculating specific death rates at different age-periods for both sexes. It need hardly be added that deaths recorded under the age-group 0-1 year must be treated differently. For this group of deaths, the most reliable estimate of the population at risk is the number of live-births recorded during the year.

10. Another important defect in the presentation of vital statistics in provincial public health reports relates to maternal mortality. In more than one provincial report, this rate has been calculated as a rate per 1,000 of the total population. This method of calculation is entirely wrong, because only the female part of the community can be exposed to the risk of death from maternal causes. The proper basis for calculating a maternal mortality rate is, of course, the total number of pregnant women during a given year. It is surprising to find that this mistake has been repeated in the 1937 health reports of Madras and the Central Provinces, in spite of the fact that over a year ago the Public Health Commissioner issued specific instructions on this very point.

Quite apart from these defects, which are all susceptible of easy remedy, the available statistical data are not being utilised as they ought to be. This question is discussed later (paras. 27 and 28).

Methods for effecting improvement.

11. From the foregoing paragraphs it will have been made clear that both quantitative and qualitative improvements are required in the vital statistics of this country. In the first place, it is essential to reduce to the minimum the large omissions in the records of births and deaths which are permitted to recur year after year.

There is little doubt that the more general introduction of compulsory registration would have considerable effect in this direction. Moreover, even in those areas in which registration is compulsory, little or no notice is taken of breaches of the law and a few judiciously selected prosecutions would have a salutary educational effect. In this connection, it may be useful to quote here the remarks made in the Maternity and Child Welfare Committee's report which has been already presented to the Board. In the chapter dealing with "Legislation", the Committee stated:—

> "The Births, Deaths and Marriages Registration Act of 1886 was the first legislative measure of its kind and, with subsequent amendments, is the only one applicable to the whole of British India. This Act, however, provides only for the voluntary registration of births and deaths. Four provinces only have so far provided themselves with their own Births and Deaths Registration Acts, whilst others have framed rules for this purpose under the All-India Act of 1886. In a number of provinces, provision has been made in Municipalities and Local Boards Act, but in most cases these Acts do not make registration of births and deaths compulsory. Whilst, also, power is given in those provincial Acts for the framing of byelaws in respect of registration of births and deaths, this is not obligatory. The

> result is that, over large areas in most of the provinces. there is even today no compulsory system of registration. This defect has always been a great handicap to all public health departments in their efforts to improve the vaccination of infants and is even more so in respect of the development of maternity and child welfare work. Even in those limited areas where registration is compulsory, the provisions of the Acts are rarely enforced, so that generally speaking vital statistics are deplorably defective."

That further improvements in registration are possible of achievement, where medical officers of health are at work, has also been proved in more than one province. If only every health officer in India would give more time to the supervision of his registrars, to inspection of birth and death registers and to the detection of omissions, the vital statistics of India would quickly give a much more correct picture of health conditions in general and would provide him with valuable information which is now lacking in respect of different aspects of public health work. A vigilant health officer should also be able to obtain more accurate records of the causes of deaths; these are essential for the proper evaluation of epidemiological and other public health activities.

Another source of assistance in attempting to improve birth registration will be found in the employment of health visitors in maternity and child welfare schemes. In at least one area in the Punjab, indeed, registration has been completely handed over to the health visitor, but, although this perhaps goes too far, these women can give valuable help.

12. Other practical steps to be taken to effect improvement must, however, vary with the areas to which they are applied. In provincial capitals and in a number of other large cities, the appointment of medical registrars, with the object of obtaining medical certification before disposal of the dead, constitutes the first step. Supervision of their work is an essential part of the health officer's duty. In these large urban areas, too, the independent medical profession should be induced to assist and, as a proportion of the deaths takes place in the hospitals which exist in these cities, the certification of all such deaths should offer little difficulty. For the registration of the large numbers of deaths not included in these two categories, responsibility should rest with the local authority's medical registrars. Part of their time should be spent in outdoor investigation; this would also give opportunities for the detection of the causes of some at least of the large numbers of unclassified deaths.

13. For other towns of lesser size and importance, it may not be possible for financial reasons to appoint medical registrars. Some improvement, however, could be obtained if provincial Governments would prescribe certain minimum educational qualifications for persons holding the posts of registrars. In addition, every provincial public health department should organise instructional courses for the training of candidates for these posts. These courses should include instruction in respect of "nomenclature" and the more important signs and symptoms of the commoner diseases. If the courses were held in a large centre where medical registrars were employed, the candidates could be given practical outdoor training by these registrars. In addition, it should be possible to give elementary lessons in the methods of tabulation of

figures, in the calculation of rates and in the preparation of the monthly and other returns in use. It may be argued that such a scheme is beyond the bounds of possibility in this country, but if the vital statistics of India are to obtain a reasonable degree of accuracy,—and those who have knowledge and experience of this subject are unanimously impressed with its importance,—then some scheme of the kind will have to be introduced sooner or later and sooner rather than later. In time, indeed, recruitment to the posts of registrars of births and deaths should be definitely limited to persons who have successfully undergone a prescribed course of training and instruction.

At the risk of being accused of mere repetition, it is necessary again to remind all Directors of Public Health that every medical officer of health along with his subordinate staff should actively and constantly co-operate with the local registers. Without that assistance and co-operation, the vital statistics records will continue to misrepresent actual conditions.

14. In rural areas the problem is much more difficult. The replacement of the village watchman by a more efficient registration agency is at present outside the range of practical politics, partly because of the cost involved and partly because of the large numbers of registrars required to cover the vast rural population spread over hundreds of thousands of villages. Improvements can, however, be effected by other means. Mention has already been made of the efforts made by certain provincial health staffs in the detection and recording of unregistered births and deaths If individual health officers showed real interest in the subject, inspected the birth and death registers in every village visited during their tours and took steps to ensure that their subordinate staffs co-operated with village headmen in this matter, marked progress would quickly be made. It will be noticed that this method depends on the general employment of district health officers. If the reorganisation and expansion of health staffs which was the subject of a unanimous resolution at the 1937 meeting of the Central Advisory Board of Health, were generally brought into force, vital statistics all over the country would soon give a much more accurate picture of actual facts than they have hitherto presented.

15. In Madras Presidency, since 1926, every district has had a trained health officer and, from the very commencement of that service, the importance of improving registration of births and deaths was repeatedly brought home to every health officer. During the early life of the new organisation, many thousands of unregistered births and deaths were detected each year by the health officers and their health inspectors and vaccinators. As proof of the improvement which was effected, the figure given in the Director of Public Health's report for 1931 of the estimated population of the province, which was based on the vital statistics of the ten-year period 1921—1931, showed an error only of 0·05 per cent. when the 1931 census figures were made available. What can be done in one province should be possible of achievement in others, but the foundations for that achievement rest on the existence of a trained health staff in every district and in every municipality.

16. In regard to greater accuracy in the registration of causes of deaths little seems possible except perhaps in restricted areas The

suggestion is made that the services of rural medical practitioners, either subsidised or whole-time servants of provincial or local authorities, might be utilised for the supervision of registration in the rural villages coming within their ambit. If village registers were submitted to these medical officers, say once a week, they should be able to make such local enquiries, as might be necessary, to elucidate facts and to advise the village officer generally in respect of the entries. For instance, if a series of cases of diarrhœa occurred or a rise in the incidence of fevers was made evident, the medical officer's attention would thus be drawn to the wider question of the community's health, apart from the limited view obtained by him from the section of the population attending his dispensary. Regular inspections of this kind could, therefore, be used not only for the improvement in the registration of vital statistics but they would bring to earlier notice outbreaks of epidemic disease. It is realised that such a scheme at present would only be possible in restricted areas, but as the tendency seems to be to expand the system of subsidised rural medical practitioners, there seems every advantage in utilising the services of those practitioners in this manner

17. In the same connection, attention is invited to a scheme submitted a few years ago to the Government of the United Provinces by their Director of Public Health for the organisation of an efficient system of rural registration. It was pointed out that the services of the same staff could also be utilised for other public duties such as distribution of quinine and assistance in the carrying out of anti-epidemic measures. A copy of the Director's note is attached (Enclosure 3).

The cost of the scheme which was estimated at something over Rs. 4 lakhs may be an obstacle to its ready acceptance, but it must be remembered that, generally speaking, provincial public health staffs, even in those provinces where considerable expansion has already taken place, are still insufficient to deal with the large areas and populations entrusted to their charge. Under these circumstances, any scheme which offers the prospect of achieving tangible results in the field of public health endeavour must take into account the necessity of placing a member of the public health service, however primitive his equipment, directly in touch with the people within an area over which he can exercise adequate control. Only in this way can intimate contact be established with the people; only in this way can the directing authority at headquarters ensure that some at least of the elementary principles and practices of preventive medicine will infiltrate into the life and habits of the people. Viewed from this standpoint alone, the scheme seems to merit sympathetic consideration.

18. As regards the compilation of vital statistics, Madras Presidency alone possesses a central organisation in the office of its Director of Public Health to which returns are sent from every village and town of the province. In other provinces, compilation is effected in intermediate stages and, only after district figures are consolidated, are they sent to Directors of Public Health.

In considering this question, attention must be paid both to the speed and completeness with which the vital statistics recorded in different parts of a province are made available at headquarters. A recent examination of provincial returns carried out in the office of the Public Health Commissioner showed that the totals of the weekly figures supplied by

the provinces differed widely from the annual figures published in the provincial health reports. For instance, in one province, the cholera mortality figures given in the annual reports for 1927, 1928, 1929 and 1930 were almost twice those of the consolidated weekly figures. These large differences may partly be explained by the fact that only a proportion of the local returns reached the office of the Director of Public Health in time for the weekly compilation which must be completed by a fixed day each week. In certain provinces, the wide areas and imperfectly developed communications probably make this defect inevitable. On the other hand, in the case of other provinces, only small differences were found to exist between the weekly totals and the totals published in their annual health reports; in fact, in one province, the two sets of figures for 1927, 1928, 1929 and 1930 were identical,—a coincidence which at once gives rise to suspicion. On investigation, it was found that the time elapsing between the last day of the week to which the return related and the date of its despatch from the office of the Director of Public Health was about three days. It is difficult to imagine that every village and urban return could have been received and compilations completed within this brief period and the probability is that an appreciable percentage of the local returns were originally missing and that no attempt was later made to make final corrections of the totals. It is this kind of slip-shod carelessness which makes Indian public health statistics much less correct than they need be.

19. In view of the impossibility of speeding up the receipt of returns from the more remote parts of a province, the only satisfactory alternative is to revise the preliminary figures of a given week during subsequent weeks. In Madras Presidency, revision is made during each of the two subsequent weeks and a recent investigation has given interesting results. "Reports regarding 269 attacks and 97 deaths from cholera which occurred during the course of twenty days were tabulated to see what the intervals were between the dates of occurrence and the dates of receipt of reports in the Director's office".

			Percentage to total.	
	Attacks.	Deaths.	Attacks.	Deaths.
Interval in days between the date of occurrence of the event and the date of receipt of its report in the Director of Public Health's office—				
1 day	7	1	2·6	1·0
2 days	50	23	18·6	23·7
3 ,,	105	36	39·0	37·1
4 ,,	160	57	59·4	58·8
5 ,,	205	69	76·2	71·1
6 ,,	224	77	83·3	79·4
7 ,,	243	83	90·3	85·6
8 ,,	245	84	91·1	86·6
9 ,,	247	85	91·8	87·6
10 ,,	249	86	92·6	88·7
11 ,,	251	88	93·3	90·7
12 ,,	253	88	94·1	90·7
13 ,,	263	94	97·7	96·9
16 ,,	265	96	98·5	99·0
17 ,,	269	97	100·0	100·0

Over 59 per cent. of the attacks registered in different parts of the province were received within four days of their occurrence and about 90 per cent. within seven days. Within a fortnight, 98 per cent. of the cases were reported. Taking three days as the average time for the postal transmission of information to headquarters, in view of the extensive area of the province and of the difficulty of communications in many areas, it is obvious that the present organisation has attained a considerable measure of success in the collection of epidemiological intelligence. Although the number of cases investigated was small, it is sufficient to indicate the degree of betterment which has been reached. No remarks are called for in respect of the reported deaths, as the differences in the intervals between reports of attacks and reports of deaths were negligible.

20. Whilst for purposes of investigation, these Madras figures have been classified in intervals of days, epidemiological figures are usually reported in relation to the week of occurrence. An analysis of the Madras cholera figures for 1936 was, therefore, made on the latter basis. It was found that the great majority of these figures was reported within three weeks of their occurrence. Assuming for the moment that reports were completed within this period, only about 30 per cent. were reported during the actual week of occurrence, whilst 95 per cent. were reported before the end of the succeeding week. The remaining five per cent. were reported during the third week.

The Madras Public Health Department has, therefore, adopted the useful procedure of submitting preliminary figures for the week ending the previous Saturday and of following this up with revised figures for the same period during the two subsequent weeks. This is a procedure which might with great advantage be adopted by all other provinces. At present, the United Provinces and the Punjab submit additional figures to supplement the returns relating to specific weeks but, from other areas, supplementary figures are only occasionally supplied.

21. Experience in Madras has shown that the scheme of centralising the compilation of provincial vital statistics is much more efficient and much less expensive than those under which a number of intermediate agencies are successively concerned. The Director of Public Health's 1937 annual report contains the following remarks on this subject:—

> "The centralisation of the work of compilation of vital statistics in the office of the Director of Public Health was found to be more efficient and economical and as a result the scheme has been made permanent during the year. The monthly returns of births and deaths in villages are collected by the *tehsildar* from the village, headmen at the end of each month and forwarded to the Director of Public Health while the municipal returns are submitted direct by the executive authorities. Although some of the village returns were received late for inclusion in the monthly vital statistical statements, every effort was made to ensure that the annual vital statistical figures were as complete as possible. Out of a total of 4,20,000 monthly returns from villages, only 784 returns of minor villages were not received in time

for inclusion in this report. These represent only 0·18 per cent. of the total and are not likely to affect the rates materially.

"When the birth or death rate in a rural town was found to be defective in any month, a special investigation was made with the co-operation of the district collector to see whether these low rates were due to defective registration, to incomplete returns or to some other cause."

Control of compilation by the Director of Public Health has therefore resulted in securing almost complete returns from all over the province and in ensuring prompt action for the correction of defective registration. This method for the improvement of vital statistics is one which merits the considered attention of all other provincial and State Governments and their public health departments. It is interesting to note that the Government of Mysore, impressed with the necessity for improving their vital statistics records, have this year introduced a very similar scheme.

Further recommendations.

22. In a memorandum purporting to deal with the whole subject of vital statistics and particularly with that of registration of births, it will not be out of place to mention three further points, although they perhaps go in a somewhat different direction than those hitherto mentioned. It is now suggested that birth registers should include two new items in relation to each registered birth, *viz.*, (1) the age of the mother, and (2) the number of the pregnancy.

23. In respect of the age of the mother, this information is essential for the calculation of fertility rates which form the basis of any reliable estimate of population growth. For some years past, the Public Health Commissioner's annual reports have laid stress on the importance of the population question in relation to the health and the economic life of the country, so that it is unnecessary here to set out the arguments in favour of this suggested amendment of birth registers. The figures obtained would undoubtedly, as in other countries, be found to be clustered round specific ages, but this is a well recognised phenomenon in census and other enumerations all over the world and is one which can be corrected by mathematical process. As Dublin and Lotka point out, "either ignorance of true age or carelessness in reporting leads to a clustering of the tabulated numbers of population at the quinquennial ages because of a natural inclination to speak in round numbers. A bias, the motive for which needs no explanation, has been observed to result in an excess of females enumerated as of ages 20 to 24 and a deficiency for the ages 25 to 29." Whilst erroneous statements of age are everywhere common, in this country they would probably be enhanced because of the average individual's ignorance of his or her real age. At the same time, an early attempt should certainly be made to collect information regarding fertility rates at different age periods. For this purpose, suitable groupings would be (1) women under 15 years of age and (2) successive five-year age periods, *i.e.*, 15—20, 20—25, etc., up to 45 years of age. It is further suggested that even if administrative difficulties forbid complete acceptance of this proposal, provincial Directors of Public Health should at least make an effort to collect this information in a number of selected urban and rural areas during the years 1940, 1941, and 1942, so that the figures could be correlated with those for female populations which will be available from

the general census due to be made during 1941. There can be no doubt as to the importance of collecting the data and it is much to be hoped that the opportunity provided by the forthcoming census will not be lost.

24. As regards the number of the pregnancy, data on this subject would provide valuable material for the study of maternal and infantile morbidity and mortality. The maternity and child welfare report presented to the Central Advisory Board of Health has shown the necessity for further investigation and, if the proposal now being made were accepted the figures would undoubtedly help to throw much-needed light on these questions and to promote the study of other sociological problems. As in the previous case, the recorded information would probably be to some extent inaccurate, especially in respect of miscarriages and abortions, but here again some effort should be made to make a beginning. The difficulties are not insuperable and should not be permitted to defer effort.

25. Finally, the question of transferring the records of births and deaths to the areas from which the persons belong deserves consideration. It is recognised that such transfers are impossible with respect to the country as a whole. There seems to be little reason, however, why this should not be attempted in the larger cities, such as Bombay, Calcutta and Madras, where the emplacement of large maternity and other medical institutions in particular areas tends to produce a very misleading picture of the vital statistics of these areas. In Bombay, for example, about 70 per cent. of all confinements take place in maternity homes and hospitals and the registration of all these births in the city wards in which these institutions lie gives an entirely erroneous picture of the birth rates not only in these wards but in those in which the mothers normally reside. These remarks apply equally to deaths occurring among patients in the different medical institutions of urban areas. Where medical registrars are employed, it should not be impossible to effect the transfer of hospital births and deaths to the birth and death registers of the areas to which the individuals belong.

Bureaux of Vital Statistics.

26. The major provinces of India, both in respect of numbers and size of territory, are as large as many of the bigger European countries. In many of these provinces, within the past 10 to 15 years, public health departments have been developed with varying degrees of success, but that development has unfortunately seldom included the establishment, in the office of the Director of Public Health, of an organised bureau of vital statistics which may without hesitation be classed as an essential part of any modern department of public health. The public health departments of Madras and the Punjab have already got well-organised statistical bureaux and the States of Mysore and Travancore are also suitably equipped in this respect, but in other parts of India the necessary statistical organisations seem to be lacking to a greater or lesser degree. It is certain that little improvement in the compilation and analysis of vital statistics can be expected until every provincial and State public health department includes a properly trained medical statistician and a suitable statistical staff. The Public Health Commissioner, as the central co-ordinating authority, must depend to a large extent on provincial and State public health departments for the data on which he bases his annual

epidemiological and statistical reviews but, quite apart from this aspect of the question, if provincial health departments are to carry out their heavy responsibilities to the populations under their charge, it is essential that their statistical data should be such as to permit of reasonably accurate deductions.

27. Under present circumstances, the only statistics which give a fairly accurate indication of the trend of events are those for plague, cholera and smallpox, because the average Indian villager has a wholesome fear of these diseases, especially when they appear in epidemic form. Taken over a period of years, therefore, the figures for these epidemic diseases provide valuable material from the epidemiological point of view and different workers have found it possible to submit them to statistical analysis and to draw reasonably sound deductions from them, provided it is recognised that the figures have their limitations. It may be hoped that, if the proposals made in this memorandum are put into practice, other public health statistics will be improved sufficiently to permit of their use in epidemiological and other investigations.

Hospital Statistics, etc.

28. Before leaving this question, attention may be drawn to the large amount of valuable statistical material which exists in the records of the hospitals situated in different parts of the country. For instance, a recent study of hospital records of cancer, carried out with the help of a grant from the Indian Research Fund Association, has revealed a number of new and interesting facts. The Indian Research Fund Association has also more recently assisted in the completion of a similar inquiry into the incidence of acute and chronic rheumatic infections in India. These are two examples of what is possible of accomplishment, if only individual workers would realise the opportunities which lie to their hands. Moreover, few investigations in the field of industrial hygiene in this country have so far been carried out, whilst with expanding industrialisation these are bound to be of increasing importance. It is also surprising that so few medical men in this country have seen fit to take up the study of statistics. Every expansion of public health activity, indeed, must inevitably call for additional trained statistical workers. for without them there can be little possibility of efficient evaluation of the results obtained from expenditure of public and private funds on health schemes.

Vital Statistics of Indian States.

29. The inclusion of vital statistics relating to Indian States is essential if a complete picture of conditions in India is to be obtained. A number of States supply weekly information in respect of cholera, smallpox and plague and these figures are published in the weekly statements issued by the Public Health Commissioner with the Government of India, whilst the statistics of a few States are also included in his annual reports. As far back as December, 1919, representatives of the public health departments of a few Indian States, along with the heads of provincial public health administrations, took part in an informal conference convened by the Government of India. The Public Health Commissioner, in his report of the proceedings of this conference, emphasised, from the point of view of international interest, the importance of collaboration from the States in the supply of epidemiological intelligence to foreign countries. It is

greatly to be hoped that the active participation of Indian States in the deliberations of the Central Advisory Board of Health will make evident to the authorities of other States the advantage to be derived from co-operation with both Central and provincial Governments in respect of the mutual interchange of statistical and epidemiological information. It must be added that much has already been done in this direction and the receipt of such information has undoubtedly given the weekly and monthly bulletins issued by the Public Health Commissioner a better claim to be of an all-India character.

ENCLOSURE 1.

List of diseases notifiable during the year 1936.

A.—British India.

(i) Provinces.

Provinces.	Notifiable diseases.		Remarks.
N.-W. F. Province	Cholera Plague Smallpox Typhus fever	Relapsing fever Cerebrospinal fever Anthrax	Notifiable in the settled districts and Political Agencies of the Province.
Punjab	Cholera Smallpox Plague Measles Chickenpox Diphtheria Tuberculosis Scarlet fever Typhus fever Enteric fever	Erysipelas Relapsing fever Influenza Puerperal fever Cerebrospinal fever Dysentery Leprosy Mumps Whooping cough Sprue	
Delhi	Cholera Plague Measles Smallpox Chickenpox Diphtheria Tuberculosis	Scarlet fever Typhus fever Enteric fever Influenzal pneumonia Cerebrospinal fever Relapsing fever	
United Provinces	Cholera Plague Smallpox Diphtheria Measles	Scarlet fever Pulmonary tuberculosis *Enteric fever *Cerebrospinal fever	*Notifiable only by medical practitioners.
Bihar and Orissa	Cholera Smallpox	Plague Influenza.	

Bengal . . . Bengal Municipal Act provides for the compulsory notification of dangerous diseases which under the law cited above means cholera, plague, smallpox, cerebrospinal meningitis, diphtheria and any other epidemic, endemic or infectious disease which the local Government may by notification in the *Calcutta Gazette* declare to be dangerous for purposes of the above Act. A list of diseases declared to be infectious by the local Government is given below:—

Very infectious, probably air-borne.

Anthrax (Woolsorters' disease)	Mumps
Cerebrospinal fever	Plague (pneumonic)
Chickenpox	Pneumonia
Diphtheria	Scarlet fever
German measles	Smallpox
Glanders	Tuberculosis (pulmonary)
Influenza	Whooping cough
Measles	Epidemic dropsy

Infection conveyed through food or drink.

Cholera	Paratyphoid fevers
Dysentery	Malta fever
Enteric fever (Typhoid fever)	

Infection through the agency of biting insects, etc

Dengue	Relapsing fever
Kala-azar (probably)	Sleeping sickness
Malaria	Typhus
Plague (bubonic)	Yellow fever

Infection by direct contact.

Gonorrhoea	Syphilis
Leprosy (probably)	Yaws

Provinces.	Notifiable diseases.		Remarks.
Central Provinces	Plague Cholera Smallpox Influenza Relapsing fever Acute poliomyelitis Anthrax Epidemic pneumonia Encephalitis lethargica Diphtheria	Scarlet fever Typhus Typhoid Mumps Dysentery Whooping cough Tuberculosis of lungs Chickenpox Puerperal fever Cerebrospinal m Leprosy	

Provinces.	Notifiable diseases.		Remarks.
Bombay	Plague, cholera, smallpox, enteric fever, scarlet fever, yellow fever, diphtheria, typhus, relapsing fever, puerperal fever, tuberculosis, leprosy, influenzal pneumonia and cerebro-spinal fever are notifiable in Bombay and Ahmedabad cities, whilst in other urban areas, plague, cholera, small-pox, cerebrospinal fever and influenza are notifiable. In Karachi city the list includes diphtheria, tuberculosis, leprosy and pneumonia in addition to the last-named five diseases.		
Madras . .	Acute influenzal pneumonia Anthrax Chickenpox Cholera Diphtheria Enteric fever Glanders	Leprosy Plague Smallpox Tuberculosis Relapsing fever Typhoid fever Influenza Rabies	In municipalities only.
Coorg . . .	Plague	Smallpox	
Assam . . .	Cholera Smallpox	Plague Influenza	In rural areas.
	Cholera Plague	Smallpox Kala-azar	In all municipalities.
	Tuberculosis Typhoid fever	Diphtheria	In Shillong municipality only.
Ajmer-Merwara . .	Plague Cholera Typhus Relapsing fever	Cerebrospinal fever Influenza Enteric group Smallpox	

(ii) Towns.

Towns.			
Lahore . . .	Plague Cholera Smallpox Measles Chickenpox Diphtheria Tuberculosis Scarlet fever Typhus fever Enteric fever	Erysipelas Relapsing fever Influenza Puerperal fever Cerebrospinal meningitis Dysentery Leprosy Mumps Whooping cough Sprue	
Delhi . . .	Cholera Plague Measles Smallpox Chickenpox Diphtheria	Tuberculosis Scarlet fever Typhus fever Enteric fever Influenzal pneumonia Cerebrospinal fever Relapsing fever	
Lucknow . .	Cholera Plague Smallpox Diphtheria Measles	Scarlet fever Pulmonary tuberculosis Enteric fever Cerebrospinal meningitis	Notifiable by medical practitioners only.
Patna . . .	Cholera Smallpox	Plague Influenza	
Calcutta . . .	Cholera Plague Smallpox	Cerebrospinal meningitis Diphtheria	

Any other epidemic, endemic or infectious disease which the local Government may by notification in the *Calcutta Gazette* declare to be dangerous for purposes of the above Act. A list of diseases declared to be infectious by the local Government is given below :—

Very infectious, probably air-borne.

Anthrax (Woolsorters' disease)	Measles
Cerebrospinal fever	Mumps
Chickenpox	Plague (pneumonic)
Diphtheria	Pneumonia
German measles	Scarlet fever
Glander	Smallpox
Influenza	Tuberculosis (pulmonary)
	Whooping cough

Towns.	Notifiable diseases.		Remarks.
	Infection conveyed through food or drink.		
	Cholera Dysentery Enteric fever (typhoid fever)	Paratyphoid fevers Malta fever.	
	Infection through the agency of biting insects, etc.		
	Dengue Kala-azar (probably) Relapsing fever Typhus	Malaria Plague (bubonic) Sleeping sickness Yellow fever	
	Infection by direct contact.		
	Gonorrhoea Syphilis	Leprosy (probably) Yaws.	
Nagpur	Plague Smallpox Relapsing fever Anthrax Encephalitis lethargica Scarlet fever Typhoid Dysentery Tuberculosis Puerperal fever	Cholera Influenza Acute poliomyelitis Epidemic pneumonia Diphtheria Measles Typhus Mumps Whooping cough Chickenpox Cerebrospinal meningitis	
Bombay	Plague Smallpox Scarlet fever Diphtheria Relapsing fever Tuberculosis Influenzal pneumonia	Cholera Enteric fever Yellow fever Typhus Puerperal fever Leprosy Cerebrospinal fever	
Karachi	Cholera Smallpox Enteric Pneumonia Leprosy	Plague Cerebrospinal fever Influenza Diphtheria Tuberculosis	
Madras	Cholera Smallpox Diphtheria Measles Acute influenzal pneumonia	Plague Tuberculosis Enteric fever Relapsing fever Chickenpox	

B.—Indian States.

Indian States.			
Rajputana States	Plague Typhus Cerebrospinal fever Enteric group	Cholera Relapsing fever Influenza Smallpox	
Central India Agency	Plague Typhus Cerebrospinal fever Enteric group	Cholera Relapsing fever Influenza Smallpox	
Hyderabad State.	There is no Epidemic Diseases Act in the State, but the usual custom has been to declare plague, cholera, smallpox, cerebrospinal fever and epidemic influenza as infectious diseases.		
Baroda State	Plague Cholera Smallpox Influenza	Tuberculosis Typhoid Meningitis	In Baroda city only.
Benares State (U. P.)	Cholera Plague	Smallpox Measles	
Rampur State (U. P.)	Cholera Smallpox	Plague	
Tehri-Garhwal State (U. P.)	Cholera	Smallpox	
Benganapalle State (Madras).	Cholera	Smallpox	

Indian States.	Notifiable diseases.		Remarks.
Travancore State	Cholera Plague	Smallpox Typhoid.	
Mysore State	Tuberculosis Typhoid	Rabies Paratyphoid.	
Jawhar State	No private medical practitioner in the State. Medical relief is provided only by the State through its own dispensaries and hence the question of notifying infectious diseases has not arisen.		
Savanur State	Cholera Diarrhoea Influenza Measles Rabies Smallpox Erysipelas Syphilis Pneumonia Mumps Tetanus	Dysentery Typhoid Cerebrospinal fever Plague Malaria Whooping cough Tuberculosis Gonorrhoea Septic fever Chickenpox	
Jamkhandi State.	Cholera Typhoid fever Cerebrospinal fever Plague Measles Diphtheria Tetanus Leprosy Septic abortion Gonorrhoea	Dysentery Influenza Malaria Rabies Smallpox Whooping cough Tuberculosis Syphilis Septimie puerperate	
Patiala	Cholera Smallpox Cerebrospinal fever Typhoid fever	Plague Tuberculosis Typhus fever	
Nabha	Cholera Smallpox	Plague	
Kapurthala	Cholera Smallpox Chickenpox Tuberculosis Enteric fever Influenza Mumps Sprue Relapsing fever Leprosy.	Plague Measles Diphtheria Typhus fever Erysipelas Cerebrospinal meningitis Whooping cough Scarlet fever Puerperal fever	
Bhawalpur State	Cholera Smallpox Tuberculosis Whooping cough Typhus fever	Plague Chickenpox Enteric fever Measles	
Jind, Sirmoor and Chamba.	Cholera Plague	Smallpox	
Faridkot	Cholera Smallpox Tuberculosis Leprosy	Plague Diphtheria Cerebrospinal meningitis	
Malerkotla	Cholera Plague Smallpox Measles Chickenpox Tuberculosis Erysipelas	Enteric fever Influenza Puerperal fever Cerebrospinal meningitis Dysentery Mumps Whooping cough	
Kalsia	Cholera Plague Smallpox Leprosy Tuberculosis Relapsing fever Measles Chickenpox	Diphtheria Scarlet fever Erysipelas Influenza Mumps Whooping cough Cerebrospinal meningitis	
Pataudi State	Cholera	Plague	

Indian States.	Notifiable diseases.		Remarks.
Dujana State . .	Cholera	Plague	
Nalagarh State . .	Smallpox Chickenpox Tuberculosis Typhus fever Erysipelas Influenza Cerebrospinal meningitis Mumps Sprue	Measles Diphtheria Scarlet fever Enteric fever Relapsing fever Puerperal fever Dysentery Leprosy Whooping cough	
Bilaspur . . .	Cholera Plague Smallpox Measles Chickenpox Diphtheria Enteric fever	Influenza Cerebrospinal meningitis Whooping cough Mumps Relapsing fever Puerperal fever Leprosy	
Jammu and Kashmir State.	Plague Cholera Typus fever Smallpox Diphtheria	Measles Tuberculosis Cerebrospinal meningitis Relapsing fever	Kashmir Province
	Plague Cholera	Smallpox	Jammu Province

ENCLOSURE 2.

Methods of registration and compilation of vital statistics and cases of infectious disease in the provinces of British India.

North-West Frontier Province.

1. ***Births and deaths.***—In rural areas, the reporting agency is the village *chaukidar* and the registrar is the police *moharrir* at the police stations. The *chaukidar* is provided with two registers for births and deaths respectively, in which entries are made by a literate person in the village, the *lambardar* being responsible for seeing that the entries are made. These registers are submitted weekly by the *chaukidar* to the police station where the *moharrir* records the events in his books.

In municipal areas, the reporting agencies include the *mahalladar* of the street, the headman of the family and the municipal sweeper. The registrar is the municipal *moharrir.*

The Director of Public Health states that if the agents for reporting births and deaths fail to report within a certain time, varying in different towns from one to three days, and if their failure to do so is detected, the headman of the family who is primarily responsible, is reported to the municipal committee and is warned or fined for neglect of duty.

2. *Infectious diseases.*—In rural areas, the reporting agent is the *chaukidar* or *lambardar* of the village as also the doctor in charge of the dispensary if there be one in the *ilaqa.* The registrar is the police *moharrir.*

In urban areas, the reporting agents for infectious diseases are the same as for births and deaths and the reports go to the municipal *moharrirs* and to the health officer of the district.

3. *Compilation.*—Compilation is done in the office of the Civil Surgeon, who submits the consolidated district returns to the Director of Public Health.

Punjab.

1. *Births and deaths.*—Both in rural and municipal areas, the system is substantially the same as that in force in the North-West Frontier Province. One difference is that *chaukidars* make only fortnightly visits to the *thana* or police station.

In most municipalities rules or bye-laws have been adopted under the Municipal Act, for regulating registration of births and deaths, whilst in municipalities where no special bye-laws have been adopted and "where watch and ward is done by the municipal police, the constable of each beat reports all deaths occurring in it".

2. *Infectious diseases.*—Under Section 141 of the Punjab Municipal Act of 1911, the responsibility for reporting cases of infectious diseases falls on (1) the medical practitioner in attendance, (2) the owner or occupier of the dwelling or (3) the person in charge of or in attendance on the patient. Suitable punishment has been prescribed for negligence of this duty.

By a general order under the "Small Towns Act", the Government have made similar provision for the reporting of infectious diseases in small towns.

In rural areas it is the duty of the village headman and watchman to report at once the appearance of any epidemic disease to the officer in charge of the police station, who should in turn immediately inform the Superintendent of Police, the district health officer and the medical officer of the nearest dispensary.

It is incumbent on medical officers in charge of hospitals and dispensaries to report outbreaks of epidemic disease in their local areas to the district health officer. Eighty-one rural dispensaries have been placed under the control of the public health department as an experimental measure and the doctors in charge visit villages within a radius of five miles from the dispensary. They inspect birth and death registers and their work is reported to have done much good.

3 *Compilation.*—This is done in the Civil Surgeon's office although, as the Director of Public Health points out, "the control of statistical work is vested in the district health officer, who is responsible for the submission of returns to the Director of Public Health".

Delhi Province.

1. *Births and deaths.*—The agency for reporting births and deaths in rural areas is the village *chaukidar* who is an illiterate person recruited generally from the depressed classes of the village. In the notified areas of Najafgarh, Mahrauli, Narela and Shahadra the male or female sweeper employed by each house, or a member of the family in the household, reports the births and deaths to the secretary of the notified area committee concerned.

The registering authority for the registration of births and deaths is the sub-inspector in charge of the police station. In notified areas, the secretaries of the committees are the registering authorities. The village *chaukidar* reports to the police station fortnightly, whilst in the notified areas reports are generally made within 24 hours.

2. *Infectious diseases.*—The agency for reporting cases of infectious diseases for rural areas is also the village *chaukidar*, sometimes the *lambardar*, *zaildar* or *safidposh* (village headman).

The doctor in charge of the rural area dispensary of the *thana* reports cases of infectious diseases in his own town.

3. *Compilation.*—Various measures have been adopted for the rapid transmission of information regarding outbreaks of epidemic diseases to the health authorities, *e.g.*, printed cards of different colours for different epidemic diseases have been distributed to the doctors in charge of rural area dispensaries who act as health officers in their respective *thanas*. These cards are filled in after information is received from the village *chaukidars*, *lambardars* and their sanitary staffs and are finally submitted to the Chief Health Officer, Delhi Province, who compiles the data and submits monthly and annual returns to the Public Health Commissioner with the Government of India.

United Provinces.

1. *Births and deaths.*—The agents for reporting births and deaths and for registering these in municipal and rural areas are practically the same as in the Punjab. *Chaukidars* from rural villages visit police stations only once a fortnight.

2. *Infectious diseases.*—In municipalities employing health officers, reports of notifiable infectious diseases are received by them within 24 hours from the registrars. In municipalities having no whole time health officers, the reports are received by the secretaries of the municipal boards and action is taken in consultation with the district health officer if there be one.

3. *Compilation.*—For compilation the returns from municipalities and rural registration circles pass to the district health officer or to the civil surgeon, where no health officer is employed. Consolidated district figures are sent by these officers to the Director of Public Health.

Bihar.

1. *Births and deaths.*—Village *chaukidars* in rural areas, beat constables in urban areas and municipal employees in certain municipalities are the reporting agents. In municipalities with health officers, registration of vital statistics has been transferred from the police to municipal agencies. In other municipalities and in rural areas, the police perform this function. The village *chaukidar* reports births and deaths at the police station once a week and beat constables in municipal areas to the *thana* every day.

2. *Infectious diseases.*—As regards infectious diseases, village *chaukidars* report to *thana* officers and the latter to the civil surgeons. In municipalities, the municipal authorities report direct to the civil surgeon and district health officers collect information daily from the civil surgeons. Early information of infectious diseases is also given to health officers by the subordinate health staffs, by dispensary doctors and, in some cases, by the people themselves.

Bengal.

1 *Births and deaths.*—In municipal areas, registration is a function of the local authority. Registration of births and deaths is governed by Sections 7 and 8 of the Bengal Births and Deaths Registration Act of 1873. It is compulsory on the head of the family to report every occurrence of birth and death within eight days to the municipal registrar appointed by the Chairman.

In rural areas, there are four classes of registration districts:—

(1) *thanas* which are completely covered by union boards;

(2) *thanas* which are entirely covered by *chaukidari* unions or which are covered partly by *chaukidari* unions and partly union boards;

(3) railway areas;

(4) rural areas other than those mentioned above.

In all four, village *chaukidars* constitute the reporting agency. Further, medical officers in charge of hospitals report vital statistics to the local registrar.

Registering authorities are for (1) presidents of union boards; for (2) presidents of panchayats; for (3) station masters and for (4) *thana* officers.

Village *chaukidars* report at *thanas* once a week in some cases and once a fortnight in other cases.

2. *Infectious diseases.*—Attacks and deaths from epidemic diseases in municipal areas are reported by the local people, including medical practitioners, to municipal chairmen, health officers or sanitary inspectors as the case may be.

In rural areas, village *chaukidars* carry the information to presidents of union boards, who in their turn report the occurrence to the sanitary inspectors of rural health circles and the district health officer. In areas where union boards do not exist, *chaukidars* report the events to *thana* officers and the latter to the sanitary inspectors of rural health circles and to the district health officer.

3. *Compilation.*—The *thana* figures are sent to the sub-divisional officer, who compiles them for all the *thanas* of his sub-division and sends the consolidated figures to the district health officer. The latter also receives returns from municipalities and he submits the figures for the district to the Director of Public Health.

In respect of infectious diseases, sanitary inspectors consolidate the weekly figures for attacks and deaths in their respective areas and submit them to their district health officer. District health officers and municipal health officers, or sanitary inspectors in municipalities without health officers, compile the figures for rural and municipal areas respectively and submit them to the Director of Public Health.

Assam.

1. *Births and deaths.*—At present there are three main agencies for the collection of vital statistics in Assam, *viz.*—municipal, police and revenue. In the districts of Sylhet, Cachar and part of the Goalpara district, where a *chaukidari* system is in force, vital statistics are collected by the *chaukidars* and reported to the police. In the remaining plains' districts, vital statistics are collected by the *gaonburas* who are employees of the revenue department. In tea gardens and railways, vital statistics are collected by the tea garden and railway authorities themselves and reported to the civil surgeon of the district. In some municipalities, subassistant surgeons who have undergone a sanitary course have been appointed as health officers. The health officers are made registrars of births and deaths and vital occurrences are reported to them by householders. In other towns having no health officer, reports are made by the householders to the police or the *gaonburas* report to the municipal office clerk or other person who is registrar to the municipality.

The *chaukidar* reports vital statistics to the police officer in charge of the *thana* and the *gaonbura* to the *mauzadars.* The police officer, the *mauzadar*, the health officer of the municipality and the tea garden and railway authorities all submit their monthly returns of vital statistics to the civil surgeon of the district.

2. *Infectious diseases.*—In municipal areas, the medical practitioner, owner or occupier of the dwelling and person in charge of or in attendance on the patient are all responsible for reporting cases of infectious disease. In rural areas the *chaukidar* or *gaonbura* submits the figures to the police station or *mauzadars* at parades which are held once a week, once a fortnight or even in some cases once a month. The entries in the village register are copied in the *thana* and *mauzadar's* registers and a monthly return is submitted to the civil surgeon.

3. *Compilation.*—The civil surgeon consolidates the returns and submits a monthly district return to the office of the Director of Public Health. The civil surgeon also compiles a monthly return of infectious diseases and sends it to the Director of Public Health.

Orissa.

1. *Births and deaths.*—The procedure for collection of vital statistics is different in North and South Orissa In the former area, the practice is in accordance with that obtaining in Bihar and Northern India generally, the village *chaukidar* and the officer in charge of the rural police circle being responsible for the reporting and registration of births and deaths.

In South Orissa, the Madras Registration of Births and Deaths Act is in force in rural areas and the procedure in rural and urban areas is in accordance with that in force in Madras Presidency.

2. *Infectious diseases.*—In the urban areas of North Orissa, the owner or occupier of the house, the medical attendant and the person attending on the patient are responsible for reporting infectious diseases whilst the health officer or civil surgeon or municipal commissioner, as the case may be is responsible for registration.

Central Provinces.

1 *Births and deaths.*—Reporting of births and deaths is the responsibility of the head of the family in municipal and notified areas and in cantonments. In rural areas, "*mukaddams*" and "*kotwars*" are responsible in the Central Provinces and police *patels* in Berar.

Registration of births and deaths in both rural and urban areas is the duty of officers in charge of police stations. In municipal and notified areas and cantonments, however, registration of births and deaths is also done by the respective local authorities. These registers are not officially recognised, although they serve the purpose of checking and correcting police registers.

2. *Infectious diseases.*—Section 212 of the Municipal Act requires notification by medical attendants. An amendment of this section is under consideration in order to make notification of infectious diseases obligatory on heads of households or any other responsible member, in addition to the medical attendant.

For rural areas the entries in the books of village officers are reproduced in police registers. The police station officers are required to promptly report cases of infectious disease to the civil surgeon.

3. *Compilation.*—District figures are compiled in the office of the civil surgeon, who submits them to the Director of Public Health. The civil surgeon also prepares a daily return of infectious diseases for his district and forwards a copy to the Director of Public Health and another to the Commissioner of the Division through the Deputy Commissioner.

Bombay Presidency.

1. *Births and deaths.*—In rural areas, police *patels* are responsible for registering births and deaths, but registration is not compulsory.

In municipal towns, registration is compulsory and a municipal clerk is usually the registrar. Where there are health officers, registration is done in their offices.

2. *Infectious diseases.*—In rural areas, police *patels* are responsible for registering cases of infectious diseases. For the rapid transmission of information regarding infectious diseases a system of notification by printed post cards is in force throughout the province. These post cards are in duplicate and have the names of the notifiable diseases printed on them in the three languages of the Presidency. On the occurrence of the first case of infectious disease, one of the cards is sent by the *patel* to the *taluka* officer and the other to the Assistant Director of Public Health, a mark being placed against the printed name of the disease which has broken out. In special circumstances, reports by telegram are called for from *taluka* officers by the public health department. Daily reports showing the number of attacks and deaths are sent thereafter by the village officers

Many municipalities have framed bye-laws rendering it obligatory on medical practitioners to notify cases of infectious diseases, although this rule is seldom enforced. Municipal authorities are responsible for the registration of infectious diseases.

3. *Compilation.*—Municipalities and *taluka* officers submit their returns to the Assistant Director of Public Health of the range, who consolidates the returns district by district and submits them to the Director of Public Health.

Sind.

1. *Births and deaths.*—In urban areas, notification of births and deaths is compulsory. The head of the family, the owner or occupier of the house, doctors, midwives, nurses and hospitals are all required to report births and deaths to the municipal authorities.

In the towns of Karachi and Hyderabad, there is a registrar of births and deaths with medical qualifications, registration *karkoons* for making enquiries in the different wards of the town and clerks. In other municipalities, the work is done by a registration *munshi* under the direction of the health officer or sanitary inspector, where such are appointed, or otherwise under the chief officer or municipal secretary.

There are no village officials in Sind as in other provinces of India. Registration of vital statistics in rural areas is done by revenue officials. The lowest revenue official is the *tapadar* who is in charge of a *tapa,* which is further sub-divided into *dehs* each comprising number of villages, but there is no separate official in charge of a *deh.*

The *tapadar* is responsible for registration of births and deaths and, as registration of births and deaths is not compulsory, few persons voluntarily report events. The *tapadar*, with his *kotar,* collects information about births and deaths during his frequent visits to the villages on revenue duty. He maintains birth and death registers for the villages in his *tapa.* Sub-registers are also maintained in villages, where there are local board schools, by school masters and in sanitary committee villages by the sanitary or pound *munshi.* The *tapadar* is also responsible for maintaining separate registers for plague, cholera, smallpox and epidemic influenza.

The revenue official superior to the *tapadar* is the *taluka* officer or the *mukhtiarkar.* The vital statistics recorded by the *tapadars* are sent to the *mukhtiarkars* of the *talukas* and by the latter to the Assistant Director of Public Health, who also receives the figures from urban areas.

2. *Infectious diseases*.—The same agencies are utilised for these as for registration of births and deaths.

3. *Compilation*.—The work of compilation for the whole province takes place in the office of the Assistant Director of Public Health, who submits the consolidated return to the Director of Public Health.

Madras Presidency.

1. *Births and deaths*.—Births and deaths are registered by special birth and death registrars in municipalities and by the village headmen in rural areas. In a few *panchayats*, separate birth and death registrars are appointed.

The village birth and death registers are regularly inspected by the officers of the public health, medical and revenue departments. The district health staff and the revenue department officials are required, during their tours, to check both the completeness and accuracy of the birth and death records in the villages. The qualifications required for a birth and death registrar in municipalities have been standardised.

2. *Infectious diseases*.—Cases of infectious diseases are registered in municipalities by the health staff and in the rural areas by the village headmen.

Daily epidemic reports of cholera, smallpox and plague from municipalities are sent by the executive authority to the various officers by post. These officers are the *tahsildar* of the *taluk*, the Collector of the District, the district health officer, the district medical officer, the Director of Public Health and the health officers of neighbouring municipalities.

As regards rural areas, the village headman sends reports of smallpox, cholera and plague every day by a special messenger to the *tahsildar* and the health inspector concerned. The *tahsildar* compiles all the reports received by him each day and sends daily epidemic reports to various officers including the health inspector, the district health officer, municipal health officer, the district Collector and the Director of Public Health.

Daily reports received from municipalities and the rural areas by the Director of Public Health are compiled each day into an epidemic return for the province and copies are sent to the Government and various other officers including all district and municipal health officers.

A check is made on the completeness of the daily reports of cholera, smallpox and plague made by the *tahsildars* by comparing, in the office of the Director of Public Health, the total number of deaths reported by them during every month with the number of deaths from these diseases reported by the village headmen in their monthly returns. Any difference between these figures is referred to the concerned *tahsildar* for reconciliation. The same procedure is adopted in the case of municipalities.

3. *Compilation*.—Municipal birth and death returns are submitted by the executive authorities concerned direct to the Director of Public Health. As regards rural areas, the birth and death returns for villages are collected by the *tahsildar* and transmitted to the Director of Public Health for compilation.

ENCLOSURE 3.

Copy of a letter No. 14139/VI(a) 1315, dated November 7, 1932, from the Director of Public Health, U. P., to the Secretary to Government, U. P., Public Health Department.

SUBJECT:—*Improvement in the registration of vital statistics and creation of village agencies for Public Health work.*

I have the honour to address Government on the need for providing a more efficient agency for the registration of vital statistics in the rural areas of the United Provinces.

2. Ever since the introduction of the system of registration of vital statistics, these duties in the rural areas have been carried out by village chaukidars as the cheapest available agency. In 1922 the number of chaukidars was reduced by 35,974. It was anticipated then that the accuracy of the statistics would suffer considerably, but the precise extent of the deterioration in accuracy has only become evident after the census of 1931, when the minimum percentage of omissions has been estimated by the Superintendent of Census operations at 15 per cent. for births and 22 per cent. for deaths. The omissions during the previous three decades were comparatively much smaller, as the following table will show:—

	Births.	Deaths.
1891—1900	"Reporting of vital statistics has been fairly satisfactory"	
1901—1910	"As nearly as possible correct"	"Between 1 and 2 per cent"
1911—1920	"2½ per cent."	"8 per cent."

The increase in the omissions in the decade 1911—1920 is probably due to the reduction in the number of village chaukidars which I understand took place in 1914 when Government took over the village chaukidari force and relieved local bodies of all charges thereon in accordance with the recommendations of the Royal Commission on Decentralisation. In regard to the omissions in the decade 1921—1930 the Superintendent of Census Operations remarks as follows:—

> "Hence we are forced to the conclusion that the births of the decade have been very considerably under-recorded.........This shows that the minimum percentage of errors in recording births and deaths in the past decade were:—

	Persons.	Males.	Females.
Births	15%	14%	16%
Deaths	22%	18%	25%

These figures may seem high but in view of the manner in which the vital statistics are collected they cannot be regarded as surprising. It is difficult to estimate how far the accuracy of the statistics has suffered in the past but I should imagine the bulk of these percentage errors has prevailed in previous decades".

He further remarks:

"Another confirmation of the fact that the estimated figures for omissions is not far out, came unexpectedly when I was dealing with the Chapter on Sex. I find that the relative number of births and deaths among females (*i.e.*, the sex-ratios at births and deaths) fall very materially from 1921 and 1922 when chaukidars were reduced, pointing to more serious omissions, which are always worse in the case of females than of males. The graph of the sex-ratios in births and in deaths shows this up very clearly."

3. The above is the state of affairs in spite of the fact that from the year 1922 the district health staff in rural areas have made special efforts to improve registration of vital statistics by lectures to the chaukidars and thana muharrirs, by recommending rewards and by more vigorous checks and punishment of delinquents.

4. Apart altogether from the large omissions in preliminary recording, which has been shown above, the following further defects exist in the present system:

(i) *Errors in classification of the causes of deaths.*—In the matter of diagnostic accuracy of the causes of deaths, greater errors would not be found in any other advanced country of the world with an organised administration. The public health departments of India, for this reason, have always resisted attempts on the part of the League of Nations and other health authorities to introduce more detailed classification of the causes of death which are dictated by modern conditions. The present returns of vital statistics in India are therefore not looked upon as being of much use and no accurate deductions are possible from them.

(ii) *Mistakes in compiling final records.*—These are compiled in the police stations from the preliminary records furnished by the chaukidars and constitute the sole permanent record to which reference can be made for proof of a particular birth or death. An investigation carried out in 1929 into the procedure for compiling these registers revealed that—

(*a*) in view of the existing procedure requiring the chaukidars to submit their preliminary records at the thanas only twice during a month on fixed dates, the births and deaths of the latter half of a month were as a rule submitted at the police stations in the next month and recorded in the thana registers *as occurrence for that month;* it was calculated that 31·5 per cent of the occurrences for a month were in this manner actually recorded as occurrences for the next month; and

(*b*) when a chaukidar was unable to attend the thana on the date fixed for him the entries furnished by him were recorded in the thana registers *as occurrences for the month in which the chaukidar furnished them, irrespective of whether after two, three or four months.*

I am indebted to the Inspector General of Police who at my request issued instructions to his staff to remedy these defects but in view of their other heavy duties I feel that no permanent improvement can be possible with the present agency.

(iii) *Delay in submission of monthly returns and difficulty in collection of epidemic intelligence.*—At present monthly returns of births and deaths are received in the office of the district medical officers of health at the earliest fully three weeks after the close of the month to which they relate. They are even so carelessly compiled (and repeated representations have proved futile) that many of them have to be returned to the circles concerned several times before the arithmetical errors can be reconciled.

Similar delay occurs in the submission of epidemic reports both of primary outbreaks and the subsequent occurrences. After a great deal of discussion with Government and the police department this department has succeeded only in requiring the chaukidars (and mukhias) to give immediate intimation to the health authorities only when an outbreak of cholera, smallpox or plague occurs in an area after a considerable lapse of time; reports of the progress or subsidence of the disease in the particular area are not submitted. In the absence of such reports the executive and health authorities have great difficulty in planning their anti-epidemic campaigns, and in the event of a widespread epidemic the true nature of its prevalence is apt to be masked. Subsequent deaths from an epidemic disease in an area are only more or less known three weeks after the close of the month in which they have occurred *i.e.*, when the monthly returns reach the district medical officer of health. This being too late for anti-epidemic purposes, an endeavour has been made for several years to compile weekly epidemic reports and this has been the sole basis for measuring the progress or subsidence of the diseases. An investigation conducted in 1930 revealed that deaths reported in these weekly returns were under-reported from 4 to 43 per cent. and that the figures of certain districts showed unusual fluctuations due to the carelessness and indifference of the reporting agency. Government may be interested to read the following remarks of District Magistrates made in this connexion:—

Mr. A. N. Sapru, I.C.S., Deputy Commissioner, Bahraich.

> "I have always thought that the present arrangements for reporting the outbreaks of epidemics in rural areas are extremely unsatisfactory. In many instances no reports are made at all and often the reports are delayed to such an extent as to make the subsequent task of controlling the epidemic in a village needlessly difficult. I do not think that much improvement is possible as long as the primary duty of reporting the outbreak is cast upon the village chaukidars."

Mr. S. H. Thompson, I.C.S., District Magistrate, Allahabad.

> "As a matter of practice, however, the reports which are received from the police stations through the Superintendent of Police are generally received late ...... I am strongly of opinion, that if accurate and expeditious reporting is to be obtained, the present system must be radically altered . . . . If the objection is raised that funds cannot be provided, I can only say that it is alternative between carrying on with the present admittedly unsound methods .....and the expenditure of money on what might be made a satisfactory system of quick and accurate reporting."

5. The ascertainment of the true state of public health of country is the first essential on which all public health work depends. "No health department can effectively prevent or control disease without knowledge of when, where and under what conditions cases are occurring". In the U. P. (in common with the rest of India) little importance is unfortunately attached to the need for collecting accurate statistics relating to the health of the people and it is not recognised what a serious handicap this is to the health authorities. They have to work almost entirely in the dark and the public has also no sure index on which to judge the value of their efforts.

6. All enquiries into the social and economic conditions of the people have also been handicapped for want of these data. The Royal Commission on Agriculture, in paras. 535 and 538 of their report strongly commented on the need for improving the registration of vital statistics "as the basis for the formulation of social policies"..................................

....

.... The Royal Commission on Labour in India also remarked on page 249 of their Report about the "grave inaccuracies in the record of vital statistics" and they are "unable to make any estimate of the effect of industrial life as distinct from urbanisation". They also strongly commended the need for more accurate record of vital statistics in the larger towns and industrial areas. The Indian Economic Enquiry Committee and the Age of Consent Committee also dwelt on the lack of accurate statistics and the need for correct statistics.

7. Apart from the above accurate registration of births and deaths is now becoming most important for other purposes of administration, *viz.*—

(i) In connexion with prosecutions arising out of the Child Marriage Restraint Act, and

(ii) Administration of Civil Justice.

(iii) A question was put in the U. P. Legislative Council some time ago, drawing Government's attention to the need for accurate registration of vital statistics in connexion with (i) above, and Government replied that the matter is under consideration but no reference has been made to me on the subject.

In regard to (ii) the following remarks of Sir Richard Burn, Kt., when junior Member of the Board of Revenue, will be of interest to Government and I have no doubt that they will be endorsed by the judicial authorities:

> "The first remark I would make is that the registration of vital statistics is already assuming greater importance for other reasons than those connected with public health. Though registration is voluntary so far as the general public is concerned, entries in the registers are being used more and more for proof of the date of a birth or death when this question comes before the Courts".

The above remark finds further support from the fact that Government had to frame rules in 1927 for the supply of certified copies of extracts from the village registers of births and deaths to the general public on payment of a fee (*cf.* para. 306-A of the Police Regulations).

8. In connection with the present economy campaign Government have decided to further reduce the village chaukidars by 10 per cent. Government's decision in regard to the strength and distribution of the chaukidars has therefore been influenced primarily on the ability or inability of this staff to do police work: not on their duties in connexion with the registration of vital statistics. The police department also desire these officials to be relieved of this duty. I consider therefore that instead of adding to the number of village chaukidars in any attempt to improve the registration of vital statistics, an entirely separate and literate agency should now be provided—an agency which can be of great use in view of the growth of public health work in recent years and the demand for rural uplift.

9. Any scheme for registration of statistics which hopes to provide reasonably accurate results will have to provide for—

(i) the officials concerned to have charge of a comparatively small area over which they can go over at least once a week,

(ii) the officials to have some elementary training in the nomenclature and symptoms of the diseases under which deaths are classified.

Such a scheme was submitted to Government in my letter No. 8248/XIII-6153(Z), dated October 14, 1924, and during the subsequent years that have elapsed, the need for it has been increasingly felt, not only for purposes of vital statistics but for the other various duties with which the district health staff are concerned, *viz.*, health education, vaccination, sale or distribution of quinine, supervision of "village aid" dispensaries, disinfection of wells, prompt submission of reports of primary outbreaks of infectious diseases, subsequent reports of occurrences, enforcement of district board byelaws relating to surface cleanliness, storage of manure and refuse, etc. (for which at present there is no agency), rendering first aid and being of help generally to the villagers.

10. With the sanction of Government (*cf.* G. O. No. 404/XVI-70, dated May 20, 1930) a modification of the above mentioned scheme has been enforced experimentally in two tehsils of Gorakhpur district from October 1930, and it was found on a year's working that the cholera death-rate, although considerably higher in the rest of the district was lower in the two tehsils in question, although they were noted in the past years as being hot-beds of the disease. It was also found that the number of vaccination operation increased by 11,834 in the two tehsils and that many other measures of village uplift were introduced.

11. *Cost of the Scheme.*—The scheme would have to be financed by Government and control of the proposed village officials retained in their hands through the district medical officer of health and the Director of Public Health. The present vaccination staff of the district boards would have to be absorbed into the scheme and paid by Government, the present expenditure of the boards thereon being recovered from them by reduction of Government grants for other purpose.

In estimating the cost of the proposal in 45 districts of the Province (excluding the three districts of Kumaun where conditions are different) I have taken the following factors into consideration:

(i) The districts would have to be divided into public health circles of 25 sq. miles each. These would contain from 25 to 30 villages and if a head-quarters were fixed at a central place, no point in the circle would

be more than 2½ miles from the headquarters. A larger circle than this would not be manageable as the official would have to visit each village at least once in the week.

(ii) The area of the Province (excluding the districts of Kumaon division) being 92,526 sq. miles, about 3,700 officials would be required.

(iii) The rates of pay proposed for them is Rs. 12—1—22 p. m. They would have to have passed the VIII standard of an English school and to have received a preliminary training in Lucknow for three months in the symptoms of diseases, method of preparation of returns, first aid, method of performing vaccination, disinfection, etc.

(iv) The existing vaccination staff would have to be absorbed in the scheme, and the existing incumbents (who are contributing to the district board provident fund) allowed to continue contribution to a provident fund to be opened for them. They would also have to be permitted to retain their existing rates of pay, but vacancies occurring on their retirement would be filled by persons on the rates of pay suggested in para. (iii) above. All such officials would be on a non-pensionable footing, like patwaris.

(v) The posts of assistant superintendent of vaccination would be retained, for compilation of vaccination returns and generally to help in the compilation of the returns of vital statistics and also to provide opportunities for promotion of the more efficient of the village officials.

The exact cost of the scheme to Government can only be worked out with precision after enquiry from district boards regarding details of present pay, rate of provident fund contribution of individual members of the staff etc. but I anticipate that the cost would be approximately as follows in the 45 districts:

	Cost of 12 months. Rs.	Ultimate cost. Rs.
1. 3,700 village officials on Rs. 12—1—22 p.m.	5,32,800	7,54,800
2. Stationery for above at Rs. 2 per head per annum	7,400	7,400
3. Postage for above at Rs. 2 per head per annum	7,400	7,400
4. Pay of 46 Assistant Superintendents of vaccination	30,806	26,580
5. Fixed T.A. of Assistant Superintendents of vaccination at Rs. 20 p. m.	11,040	11,040
6. Cost of vaccine lymph (Rs. 23,940) and contingent and other expenses (Rs. 6,040)	30,000	30,000
7. *Add* in respect of existing vaccination staff—		
(*i*) higher rate of pay they are drawing at present	81,840	..
(*ii*) Provident fund contribution	8,400	..
	7,09,686	8,37,220
Deduct existing expenditure of district boards (45) on vaccination (including employees' provident fund contribution)	2,99,894	2,99,894
Net cost to Government	4,09,792	5,37,326

12. The advantages accruing from the introduction of the above scheme will be as follows:—

(i) immediate anti-epidemic measures in the case of cholera and plague can be carried out, which would certainly result in very considerable reduction in the death rate from these diseases and probably in their eventual extermination.

(ii) Vaccination would be far better carried out than at present and this would probably result in complete eradication of small-pox in a very short time.

(iii) *Economic advantages.*—(*a*) The supply of quinine to remote villages would be made constant and regular thus generally reducing the morbidity from malaria, which is the greatest cause of the physical debility and low working capacity of the rural population.

(*b*) The reduction of malaria would enable the village people to put more sustained efforts into their lands which would result in better crops, as the enclosed copy of a note by the late Director of Agriculture, U. P., will show and which is further supported by paras. 397 and 413 of the Report of the Royal Commission on Agriculture. The favourable effect of these better crops on the revenues of the Province can easily be estimated.

(*c*) The whole of the process of the amelioration of village life can be constantly taught to the villagers which would result in a large improvement in the standard of living. The Royal Commission of Agriculture, in paras. 421—524 of their Report, commended on the need for providing guidance for villagers in these directions. The proposed agency would be pre-eminently suited to give this guidance.

(*d*) Returns of vital statistics would be reasonably correct and comparable with those of other countries of the world and intelligent deduction on social and economic conditions of the people will be possible.

APPENDIX II.

Memorandum on Prevention of the Spread of Cholera in India. (with two enclosures).

1. The increased incidence of cholera in a number of provinces and States during 1938 has been a subject of serious concern to nearly all public health departments in India and it is not surprising, therefore, that the Governments of the Punjab and of Mysore State have suggested that the question of the better control of this infectious disease should be placed on the agenda for this meeting of the Central Advisory Board of Health. Before dealing with the specific recommendations made in the communications received from these two Governments, it will be of value to give a brief account of the previous action taken on this question by the Government of India and by provincial Governments.

2. The important part which religious fairs and festivals play in the development and spread of cholera epidemics is one which has long been recognised by public health officers in this country. It must always be remembered, however, that pilgrim traffic is not the only factor responsible and, in discussing the subject of control of cholera, these other factors must be kept in mind. In the years immediately preceding the Great War, a number of provincial Pilgrim Committees were appointed at the instigation of the Government of India The duty of these Committees was to report on the pilgrimage centres in their own provinces and to make recommendations for their better health control, with particular reference to the prevention of the spread of cholera. Pilgrim Committees were appointed in the United Provinces, Bombay, Bihar and Orissa and Madras,—in each case the Public Health Commissioner with the Government of India being the Chairman,—and their reports were published between 1913 and 1916. It is not too much to say that these reports provided a great stimulus to preventive work in general and they are still deserving of careful study, as many of their recommendations are applicable to present-day conditions. It is, however, not proposed to give here any summary of these; that would be a work of supererogation.

3. In some provinces, much has been done to implement the recommendations made in respect of health control of the larger festival centres. The public health departments concerned have drawn up definite and detailed plans of campaign and these constitute clear instructions for the guidance of local officers responsible for the sanitary control of the individual festivals. On each occasion a festival is held, a complete health report is also submitted to the provincial Government along with recommendations covering any noticeable defect in the organisation. These methods should be applied to all important festival centres in India; carefully recorded experience will always be of value in planning future improvements. Even as regards the minor festival centres,—and these reach large numbers in more than one province,—the control is much more effective today than it was twenty or more years ago. The guiding principle in both cases should be to make permanent sanitary arrangements. In addition, all important places of pilgrimage should have their own full-time health officers. There can be no doubt that any

relaxation of effort in the control of these centres, especially in view of the general lack of sanitary amenities, would immediately result in outbreaks of cholera and in wide dissemination of infection.

4. Even in those provinces with the best organised health departments, however, it cannot be held that sufficient has been done to ensure that cholera will not on occasion spread from these potential foci of infection. It is impossible to believe, for example, that the controlled sanitation of a restricted area occupied by pilgrims in a festival centre will give complete protection to a province or to neighbouring provinces. Pilgrims travel long distances to and from these centres by rail and by road and only too often the villages and towns through which they pass have little or no provision for water supply or conservancy, using these primary sanitary necessities as an illustration. The control of the spread of cholera, in fact, means much more than the sanitation of the festival centres. It requires, in the first place, a whole-time trained health staff for every district and municipality in India; it means the provision of wholesome drinking water and the practice of conservancy in every village and town in the country. Then and then only, will the present danger be determined; then and then only, will it be possible for pilgrims and other persons to travel in safety to and from one province and another.

5. It is interesting to note that none of the Pilgrim Committee reports make any reference to the protection conferred by inoculation with anti-cholera vaccine. In 1929, Sir Leonard Rogers recommended to the Government of India that all pilgrims going to the Kumbh Mela of 1930 should be inoculated in good time before leaving their own province. Another suggestion was that pilgrims entering the United Provinces by train *en route* to the *mela* should be inoculated before being allowed to proceed further. These suggestions were circulated to all provincial Directors of Public Health for opinion. The proposal to introduce a system of compulsory inoculation, either before the pilgrims left their own province or at railway stations on their way to a festival, was unanimously rejected as impracticable, inexpedient and even dangerous; all were, however, in favour of a scheme of voluntary mass inoculation. Indeed, the figures of anti-cholera inoculation operations which were published in provincial public health reports from 1925 onwards showed that all Directors of Public Health had previously accepted the evidence that anti-cholera vaccine provided valuable protection against infection and had made strenuous efforts to persuade the populations, exposed or likely to be exposed to infection, to submit to inoculation. All provincial schemes, it is to be noted, were and are on a voluntary basis. The value of anti-cholera inoculation has been since then constantly brought to the notice of the people by different forms of propaganda and that this educational work has been effective is evident from the statistics contained in later provincial annual health reports.

A further suggestion made in 1929-30 by the United Provinces Government was to the effect that railway tickets for *melas* should be issued to "inoculated pilgrims only". This suggestion was also considered to be impracticable. The final suggestion that "concession" tickets should be granted to those presenting a cholera inoculation certificate was given some support, but the attitude of railway technical officers present at the Conference, at which this point was raised, was definitely noncommittal.

6. That it will be necessary for many years to continue propaganda work in favour of anti-cholera inoculation, no one with any knowledge of India can deny, because of the difficulty of financing schemes for protected water supplies and for other sanitary amenities. It has been claimed by some health authorities that cholera can be controlled and even completely stamped out by means of general mass inoculation, but it is doubtful whether such a happy result would follow in India, even were it practicable to inoculate every one of its 380 million inhabitants. Whatever may be the opinion on this question, there can be no doubt that the anti-cholera vaccine provides the practitioner of preventive medicine with a most effective and valuable weapon against the cholera scourge and its extended use should be encouraged in every possible manner.

The Punjab proposal.

7. The question of introducing a measure for the compulsory inoculation of all pilgrims has now been raised by the Punjab Government (Enclosure 1) and is for discussion by the Board. At this point it will be useful to quote the views expressed by the Public Health Commissioner with the Government of India in 1930 when this subject was last raised. He stated that "the whole consensus of technical opinion which I have been able to elicit confirms my original opinion" that "the wisest, most practical and most practicable line is voluntary mass inoculation as distinct from compulsory mass inoculation. Mass inoculation on a voluntary basis should certainly be attempted on as large a scale as possible, and, in order to achieve this, it is essential to resort to strong effective propaganda in every possible way even through the medium of religious institutions, *sabhas*, *mandalis* and local bodies. Facilities for voluntary inoculations to intending pilgrims should be given at as many strategical points throughout the province as possible."

A further reasonable argument against compulsory mass inoculation was made by the then Director of Public Health of the Punjab. He held that it would still be necessary to adopt all the precautionary measures which were ordinarily carried out, even if compulsory inoculation were introduced, and that the feeling of resentment created by compulsion would render it extremely difficult to carry out the other necessary measures.

8. The position has improved to some extent since this subject was last raised in 1930, because the people have gradually become accustomed to the idea of inoculation and now raise far less objection to the operation. At the same time, one of the old difficulties remains. It has always been, and still is, almost impossible to get any numbers of the population to submit to inoculation in the complete absence of the disease and this is what compulsory inoculation means. It follows that inoculation on a large scale purely as a precautionary measure is still not a practical proposition. The Government of India in 1930 referring to this point stated that "whether or not it will be possible to arrange for compulsory inoculation upon future occasions, when public opinion has been further educated upon the advantages of inoculation is another question, but it will probably be many years before any such arrangements are feasible".

Most public health officers with experience of India will probably agree that any scheme of compulsory inoculation is not yet feasible. It seems that the best policy would be to continue to instruct the people in the value of inoculation and to trust to the voluntary methods which have been in use for the past 20 years and,—it may be added,—not without success. The figures given in the provincial annual public health reports during recent years indicate the increasing numbers which receive protection by inoculation against one or other of the infectious diseases. These educational processes should be further extended and as knowledge spreads, so will it become more customary for intending pilgrims and other persons to seek for inoculation against cholera. It would appear that the arguments used 8-9 years ago still have much force.

9. It is possible that during more recent years the propaganda campaigns in favour of inoculation have been allowed to slacken off, because of the continued decrease in cholera incidence. If that be the case, the 1938 epidemic will have indicated the imperative necessity of continuing intensive propaganda work in this connection. The lurking danger is always there and no slackening of effort is permissible under present circumstances.

Anti-Cholera Vaccine.

10. One point in connection with the anti-cholera vaccine must be stressed. Within recent years, cholera research has thrown fresh light on the bacteriology of the whole group of vibrios and particularly of the *V. cholerae*. It has now been shown that only by careful serological tests can the latter be differentiated from others of the vibrio group. The preparation of cholera vaccine requires considerable skill and care if the power of protection is to be ensured. Now that cholera vaccine is being manufactured not only in different provincial laboratories but also by a number of industrial concerns, it is important that all Directors of Public Health should make certain that the vaccine used in their provinces is prepared from true *V. cholerae* and that it is of such a nature as to give the due degree of protection. It seems necessary to stress this point because it is of the utmost importance that the individuals submitting to inoculation should be in no doubt as to the protection conferred. The use of an ineffective vaccine gives both medical and public health authorities a false sense of security and would certainly invalidate the whole preventive campaign. Moreover, if it should unfortunately happen that a number of inoculated persons contracted cholera or died of that disease, the whole campaign for mass inoculation would be defeated and further progress would be stayed for many years.

The Mysore proposals.

11. In respect of the proposals made by the Mysore Government (Enclosure 2), it should be a simple matter to arrange for the preparation of lists of festival centres, both major and minor, in each province or State and to make an interchange of that information.

It is essential also that close cooperation should be established between neighbouring provinces and States, because it is impossible for any Director of Public Health to make adequate arrangements for the protection of his own area if he is unaware of the health conditions of the country lying near his borders. A considerable degree of cooperation

in the exchange of epidemiological information has been effected during recent years, but much remains to be done particularly in respect of the immediate exchange of epidemic figures between local health officers working in areas divided only by a State or provincial boundary. It is for provincial and State Governments and their public health departments to arrange working details in this connection.

The provision of protected water supplies is a matter for provincial and State Governments, the importance of which cannot be over emphasised. The members of the Board are already aware of the action being taken in this connection in a number of provinces and States in the country and it may be recalled that in certain provinces part of the Government of India's (1936-37) grant of one crore was allotted for the provision of protected water supplies. More recently still, a number of provincial Governments have allotted additional funds for the same purpose.

12. This brief memorandum does not make any pretension to have covered the many important points which arise in connection with the control of cholera. It is probably correct to say that all public health departments,—whether provincial or State,—are very much alive to the importance of this subject and are all doing everything they can with the limited means at their disposal to meet the danger. Reference has already been made to the Pilgrim Committee reports which make general recommendations in addition to giving details of the requirements of individual centres. The time seems ripe, however, for a further review of the situation and discussion of the subject by the Central Advisory Board of Health will be of great value, as it will give the opportunity to those working in the public health field to pool their experiences and to indicate what further steps are necessary in the light of the new facts now available.

ENCLOSURE 1.

A NOTE ON

INOCULATION AGAINST CHOLERA OF PILGRIMS PROCEEDING TO FAIRS

From

the Punjab Government.

1. Big bathing fairs have been held in the past in the Punjab during the cholera season. Hundreds of thousands of pilgrims have visited these fairs, but elaborate sanitary arrangements made have always been successful in preventing the outbreak and spread of cholera. The history of Kumbh fairs held in the United Provinces, however, has not been so bright. These fairs attract a large number of pilgrims from all parts of India and have been notorious for spreading cholera to the whole of India including the Punjab.

2. Investigation has proved that during the past 70 years those which showed the heaviest incidence of cholera in this Province were the years when a large number of returning pilgrims spread the disease all over the Province. The only exception to this rule seems to be the 1892 epidemic which shows the heaviest incidence on record. This epidemic followed the Kumbh year of 1891 when infection was introduced into the Province and was widely diffused and owing to very favourable epidemiological factors flared up in 1892.

3. Keeping the lessons learnt from the past Kumbh fairs in view, very elaborate precautionary measures were adopted well in advance this year; a circular letter was issued to all district and municipal medical officers of Health in the Punjab in the month of December last in which a clear warning of the impending danger was given and certain principles were laid down for the guidance of the officers concerned for prevention of importation of infection. These included, amongst others:—

(1) Protective inoculation of all intending pilgrims.
(2) Establishment of medical inspection posts at all key positions on roads and railways.
(3) Arrangements for isolation of cases and segregation and following up of contacts, and their notification to Health authorities concerned.
(4) Treatment of cholera cases and disinfection.
(5) Application of the Epidemic Diseases Act.

4. All district medical officers of health were advised to mobilise their staff and maintain an adequate stock of vaccine, medicines and disinfectants.

5. In addition to the above, railway authorities were requested to assist in establishing joint inspection posts at important railway junctions and in checking all pilgrims returning from Hardwar and travelling by rail. Three such posts were established, *viz.*, at Ambala Cantonment, Ludhiana and Amritsar, four more were added on by the Patiala State authorities, *viz.*, at Bhatinda, Rajpura, Dhuri and Narwana. Important road posts were established at the following places:—

(1) District Ambala—Abdullapura, Barara, Kalka-Simla Road.
(2) District Karnal—Radaur, Smalka and Thanesar.
(3) District Ludhiana—Khanna and Ludhiana.
(4) District Amritsar—Beas and Jandiala.
(5) District Gurdaspur—Chakki (at the gate of Kangra valley).

These posts could not possibly be expected absolutely to prevent the importation of cholera into the Province. Their main purpose, however, was to see if any person fell ill in the interval between the time of departure from Hardwar to the time of arrival at home. As the incubation period of cholera ranges from a few hours to 5 or 6 days, a considerable number of outwardly healthy persons who would develop disease subsequent to arrival at their homes must necessarily filter through these posts and this is exactly what has happened. Under the circumstances explained, the utility of these inspection posts might be questioned but there is no doubt that these inspection posts were instrumental in detecting a large number of cases which would otherwise have gone to their homes and would have been the means of spreading cholera there.

6. In the beginning before the fair started, the Government was requested to extend the provisions of the Epidemic Diseases Act to the districts of Ambala, Ludhiana and Amritsar; these were later on extended to the districts of Lahore, Ferozepore, Gurgaon, Simla, Karnal and Hissar.

7. *Origin of cholera outbreak.*—The fair started at Hardwar on 1st February 1938 from which date the people began to collect there. The chief bathing day was Baisakhi on 13th April. Cholera was imported from Bindraban into Hardwar on 6th April and had flared up soon after, the dispersing pilgrims began to import it in this Province from 9th April and such cases began to be detected at various rail and road inspection posts first in districts nearer to Hardwar and later on in those situated further afield.

8. The following table shows the number of localities reporting importations by dates. There were no reports between 9th and 16th April but after that, within five days, 26 districts had been infected and the disease had become very wide-spread, the total number of infected localities being 84. During the first fortnight, *i.e.*, from 16th to 30th, almost all the cases were imported, *i.e.*, amongst returning pilgrims. After that, however, indigenous cases also started to occur.

TABLE.

Date.	Number of freshly infected localities.	Total.
April 1938—		
18th	17	17
19th	13	30
20th	35	65
21st	19	84
22nd	6	90
23rd	*	*
24th	21	111
25th	34	145
26th	26	171
27th	10	181
28th	22	203
29th	18	221
30th	15	236

* Not available.

9. The Punjab Government was also not slow in entertaining the additional staff to meet the scare of cholera, which had by then assumed severe epidemic form and an army of field workers comprising sub-assistant health officers, sanitary inspectors and menial staff was entertained. This cost the provincial exchequer an approximate sum of Rs. 1,20,000 for the additional staff and for the purchase of cholera vaccine. The normal public health staff, thus augmented by the emergency staff, carried out a vigorous anti-cholera campaign and performed 565,365 inoculations up to the end of August, 1938. In spite of all these measures and prophylactic inoculation, the disease was responsible for 10,200 cases and 5,400 deaths up to the end of August 1938. This shows that there is some flaw in the system of carrying out and enforcing our anti-measures on the unwilling masses by persuasion.

10. The object of eliminating the possibility of infection before and after the fairs can be achieved if there is a law to enforce the precautionary measures taken by the department. In the absence of any legal binding, this object cannot be achieved and it is, therefore, suggested that, in consultation with other Provincial Governments, a law be enacted and no pilgrim be allowed to enter a fair area until he/she is adequately protected against cholera by inoculation.

ENCLOSURE 2.

A NOTE ON

Prevention of Inter-Provincial Spread of Cholera Epidemics in India

By

The Director of Public Health, Mysore State.

Colonel Russell, who has published a good deal on cholera in India, has very often emphasised the important role played by pilgrims at fairs, festivals and *melas* in the spread of cholera, not only within the Provinces and States, but to other areas. The pilgrims drawn from different parts of India to these big *melas*, when they catch infection, become moving foci of infection on their way and start fresh sources of infection in their own homes. In the case of this water-borne disease, it is well known that provision of protected water supplies and the prevention of indiscriminate fouling of water sources and courses by providing efficient sanitary arrangements prevent the outbreak of epidemics. If, therefore, the *mela* centres, fairs and festivals are provided with protected water supplies,—this being a matter of urgency and priority in the measures suggested,—it is possible that the spread of this dreadful scourge might be prevented to a considerable extent.

2. In an attempt to prevent the inter-provincial spread of cholera, it is necessary that all administrations concerned,—Central, Provincial and State,—should hold consultations with one another and coordinate their efforts for effective control of this disease of all-India importance—especially as such chances of spread are of almost annual occurrence.

3. In this connection, the following proposals may be discussed at the forthcoming meeting of the Central Advisory Board of Health:—

(1) Each Province and State to prepare (1) a list of fairs and festivals that attract congregations not only from inside the Province but also from outside, and (2) another list of minor fairs and festivals.

(2) Each Province and State to arrange for the ways and means to provide such centres with protected water supplies. In case of local bodies or religious institutions responsible for running the *melas*, being unable to provide the necessary funds for this purpose, special Provincial or State grants to be made.

(3) To hasten the progress of this work in all Provinces and States, in the case of fairs and festivals that are responsible for inter-provincial spread, the Government of India should be requested to make suitable grants.

APPENDIX III.

Memorandum on Public Health Organisation.

1. It will be recalled that the Central Advisory Board of Health at its meeting held in June, 1937, discussed the question of the "Organisation of Public Health Departments".

2. The resolutions passed by the Board at the end of the discussion read as follows:—

(1) "The Advisory Board of Health having considered the facts set out in the Memorandum dealing with the organization of public health departments recommends that all Provincial Governments should possess powers (*a*) to form Provincial Public Health Services, (*b*) to require municipalities and local boards to appoint medical officers of health, and (*c*) to lay down suitable conditions for the recruitment, qualifications and terms of service of health officers. The Board further recommends that where Provincial Governments do not possess these powers the necessary legislation should be passed with the least possible delay."

"The Board is further of opinion that for the development of public health organizations and the formulation of public health schemes in municipalities and districts, adequate funds should be allotted by Provincial Governments and local bodies. To the same end, the system of percentage grants-in-aid from Provincial Governments to their local bodies is one which should be encouraged."

(2) "In order to promote coordinated effort in preventive medicine between the Medical and public health departments, the Board recommends the establishment of a Central Health Board (or Committee) at the headquarters of each Province and of a Health Bureau (or Committee) in each district."

(3) "The Board desires to bring to the notice of all Governments, Provincial Medical Councils and the Medical Council of India the necessity for improvement in the teaching of hygiene and public health as part of the Medical Colleges and Schools curricula for medical qualification and registration."

3. The subject of "health and medical services" was included in the agenda of the Intergovernmental Conference of Far Eastern Countries on Rural Hygiene held in Java in August, 1937, and the published report of that Conference contains a summary of the points which came up for discussion prior to the adoption of a number of resolutions dealing with different aspects of the subject. The relevant paragraphs in the summary run as follows:—

"Many official medical and health departments seem to have difficulty in securing and keeping competent personnel, but this is largely a question of economics. Governments would be well advised to take full cognisance of the fact that cheap personnel leads to inefficiency, a lower standard of public health and costly reconstruction. Security of tenure for a health officer is an essential factor in enabling him to discharge his duties fearlessly and efficiently. Many reports refer to the disinclination among medical men to practice in rural areas."

"Reference was made to the fact that the establishment of a medical or hospital service without a properly organised health service does not raise the standard of general health. It seems a very important principle that, wherever possible, hygiene work should precede curative work in order to obtain a more efficient use of dispensaries and hospitals and make more permanent the benefits of curative activities."

"There was general agreement that personnel whose whole-time official duties are concerned with hygiene should not be conceded the right of private practice, but that due account of this fact should be taken in fixing the scale of their emoluments Ability to carry out hygiene work successfully is largely an inborn talent and not only an attainment of education, and only the candidate who possesses this talent can be trained in technique and developed into a good worker. This applies to medical as well as auxiliary personnel."

"Most of the speakers wished to emphasise the fact that improperly trained personnel cannot secure the confidence of the rural people without a definite technique acquired only by a thorough training in methods and procedure. The presonal character of workers in all grades is also a matter of vital importance. Tact and patience are cardinal virtues in a health worker."

4. The important points mentioned in these paragraphs are set out in the following three resolutions of the Conference:—

"(4) It is absolutely necessary to bring medical and health services as near to the population as possible, but the decentralisation of activities should be guided and supervised by a central body in order to maintain efficiency and ensure a uniform policy."

"(5) While it is believed that decentralised preventive effort brings, comparatively, the greatest benefit to the health of the rural population at relatively the smallest cost, the means of applying this principle must necessarily vary with different local conditions and resources. No single type of organisation can be recommended for general adoption, but it is essential that, whatever the means may be, they should be applied with sufficient thoroughness to make the beneficial effect of preventive work clear to the rural population and that the area of operations should be defined accordingly. The likelihood of attaining results which are permanent is increased if the size of the field of operation is determined in accordance with the capacity of the staff."

"Progress will depend on gaining the confidence of the people by demonstrating to them the benefits of preventive work, so that they will voluntarily take a share in the work by contributing to it in money or in labour."

"A preliminary study of local conditions and requirements in the villages themselves should serve as a basis upon which details of the local services can be organised."

"(15) It is essential to the proper functioning of a health service that the emoluments offered be fully adequate so that the right type of man with proper training may be attracted and retained, and enabled to devote his full time to the service."

5. The Government of India in their letter No. F. 37-22/37-G., dated 9th July 1938, drew the specific attention of all provincial Governments to these resolutions and added that it was proposed to place their subject matter on the agenda for the next meeting of the Central Advisory Board of Health.

6. As regards Resolutions Nos. 4 and 5 these deal mainly with the decentralisation of medical and health services, but emphasis is laid on the necessity for "a central body in order to maintain efficiency and ensure a uniform policy". It is to be noted that the Central Advisory Board of Health has already recommended "the establishment of a Central Health Board (or Committee) at the headquarters of each province and of a Health Bureau (or Committee) in each district" in order "to promote co-ordinated effort in preventive medicine between the medical and public health departments". In certain provinces, such Health Boards have been in existence for some years past and have not only performed useful advisory functions but have been able to promote the close co-operation between medical, public health and engineering departments which is so essential for united advance in the field of preventive medicine. Members of the Central Advisory Board of

Health will no doubt be interested to have some description of the activities of these provincial Boards of Health from those who have experience of their working.

7. It is no easy task "to bring medical and health services as near to the people as possible" and "to make the beneficial effect of preventive work clear to rural populations". At the same time, progress is being made in different ways. One of the more recent developments in several provinces has been the formation of rural "Health Units". The "Health Unit", as at present planned, deals only with a restricted area and a restricted population, because what is required in the first place is quality of work rather than quantity. The Unit's activities, which are based on sound standard public health methods, require a permanent staff of trained workers controlled by a well qualified and experienced health officer so that these methods may be applied with sufficient thoroughness. Only after "preliminary study of local conditions and requirements" is it possible to draw up an active programme of work which then is planned and carried out in such a way as to gain the confidence and co-operation of the people themselves. In more than one province, the "Health Unit" scheme has already achieved considerable success, not only in its task of improving local health conditions but as a demonstration centre and as a field for training health workers of different varieties and grades. The population group dealt with by a Health Unit, however, is small and it would be impracticable to suggest that India could find the money to provide, for the whole country, organisations on the scale set down for these restricted areas. So long, however, as the policy and practices are followed and a suitable standard is maintained, it should be possible for the health officer to extend his activities and those of his staff over much wider areas. In fact, this has already been carried out in Burma with success and with a correspondingly large reduction in what might be called "overhead charges". For instance, the plant and equipment provided for the original "Health Unit" area should be sufficient to meet the requirements of a much larger population. The urgency of taking every possible step to raise health standards in the rural areas of this country is so great that it will be of value to have this question discussed by the Central Advisory Board of Health.

8. The recommendation made in Resolution 15 of the Java Conference is intimately associated both with what has been said above and with the resolutions passed at the previous meeting of this Board. One of the greatest handicaps to progress in preventive medicine is the employment of untrained or partially trained health staff,—superior or subordinate. The first essential in "Health Unit" areas, as in municipalities or districts, is a well trained and qualified health officer and that officer, if he is to be a success must possess not only personality, but energy, enthusiasm, tact and patience. It is not possible to obtain men in possession of these qualifications and qualities without offering suitably attractive emoluments and conditions of service. Moreover, if the health officers concerned are to discharge their duties 'efficiently and fearlessly', one of the most important of these conditions of service is security of tenure. This point was stressed in the Memorandum presented to the Central Advisory Board of Health in 1937, but it is of such vital importance that no apology is offered for drawing attention to it again.

9. The Board's resolution of 1937 also recommends that where provincial Governments do not possess the powers to lay down suitable conditions for the recruitment, qualifications and terms of service of health officers, they should take steps to pass the necessary legislation. At present, legislative health measures are usually to be found scattered over a number of other provincial enactments and these are in consequence not only incomplete but are generally looked upon as subsidiary to other matters contained in these enactments. The most effective way of improving and amending this mass of legislation is for each provincial Government to frame and pass a consolidated Public Health Act. These consolidated Public Health Acts, should, of course, be brought up-to-date and should be framed so as to cover adequately every part of the whole field of public health. They would therefore contain the necessary sections dealing with the recruitment, terms of service, etc., of health officers and other health staff.

10. Some of the points raised in this memorandum have been already the subjects of resolutions by the Board, but because the Java Conference report has stressed their importance and has invited consideration of its resolutions by all participating countries of the Far East, it was necessary to present the important points in the Java resolutions for further discussion and to seek once more the opinion of the Central Advisory Board of Health.

APPENDIX IV.

Memorandum on the Necessity for Cooperation in Public Health Measures.

1. At its inaugural meeting in June 1937, the Central Advisory Board of Health discussed the need for common planning by the health authorities concerned regarding those problems which are of common interest to the civil, military and railway communities. It was agreed that a committee be formed to examine and report on this question, especially in relation to the control of malaria. After the meeting, the terms of reference for this committee were considered and it was regarded as inadvisable to constitute the committee until further information was made available. It was pointed out that the health problems affecting civil, military and railway communities in common must be very numerous in India and that it would be a formidable task for any committee to "examine and report" on such health problems. It was considered that it would be more practical, firstly, to produce evidence as to the nature and scope of such health problems in India and to suggest general principles which might be adopted for their solution. The solution of each problem must be worked out locally after an adequate stimulus has been provided and when general lines of procedure have been recommended.

2. The most feasible method of collecting preliminary information regarding the places in India where cooperation is required seemed to be through the military medical authorities. The Director of Medical Services, therefore, very kindly addressed his Hygiene Staff officers in the different Commands and their replies have produced a number of useful details. These have been tabulated (Enclosure) to show the various stations in which cooperation is taking place, or in which it is required, and the different health problems which demand combined action for their solution. It is not suggested that the table is in any way exhaustive, but it does give a bird's-eye picture of the problem of cooperation between the civil and military health authorities. Only in a few instances in the tabulated statement are the railway authorities mentioned. There has not been time to collect information showing where the health problems and interests in railway areas converge on those of the civil and military authorities. Now that the civil and military problem has been assessed to a fair degree in the attached table, it is suggested that each Director of Public Health should take up for his own Province, in conjunction with the railway health authorities, the listing of those places where cooperative action between the railway and other health authorities is essential.

3. Speaking generally, the information in the table shows that cooperation does exist to a greater extent between the civil and military health authorities than was thought to be the case. The general experience seems to be that cooperation is best ensured by the formation of combined local health committees. These committees may of themselves have no executive power, but they serve as a valuable clearing house for ideas and a forum in which the combined welfare of the different communities can be discussed and advanced.

4. It is desirable that the constitution of these committees should cater for a full and wide expression of ideas on the part of those who are interested and accordingly they ought to include non-officials as well as officials. Only in this way can the necessary understanding be arrived at by the parties concerned, while unnecessary correspondence and non-constructive criticism will

also be reduced. The following individuals are suggested as suitable members of a local combined public health committee. The numbers can be greater or less as local circumstances may dictate.

(1) Deputy Commissioner (Collector) or his representative—Chairman.
(2) Chairman of Municipality and/or Chairman of District Board.
(3) Municipal Health Officer, District Health Officer or Civil Surgeon (as applicable).
(4) Station Commander.
(5) Senior Military Medical Officer.
(6) Assistant Health Officer of the Cantonment.
(7) Cantonment Executive Officer.
(8) Cantonment Engineer.
(9) Garrison Engineer.
(10) Municipal and/or District Board Engineer.
(11) Representatives of other interested bodies, for example, railways, large industrial concerns, etc.

The Director of Public Health, the Assistant Director of Hygiene and the Deputy Assistant Director of Hygiene should be members *ex-officio* of such a committee. These officers should make a point of attending the meetings when their tour programmes permit of their doing so. An example of such a committee is to be found in Rawalpindi where a joint anti-malaria scheme is in force and representatives of municipal, railway, cantonment and brewery authorities attend the meetings of the malaria committee. For some years health progress in Karachi has also benefitted by the monthly deliberations of a committee on which the municipal, the cantonment and the port health authorities are represented.

5. In some stations it will be advisable to form a sub-committee. This will meet the difficulty which may be experienced in getting all the members of the Committee described above to meet at frequent intervals. The sub-committee could suitably consist of the different Health Officers and they might be empowered to deal with minor questions, while on major issues they should make recommendations to the main Committee.

6. An example of how progress is impeded by the lack of genuine consultation and cooperation is shown by the following happenings in one of the large cantonments this year. Mosquito breeding was occurring in the cantonment area owing to the scouring of a *nullah* at the foot of a bridge which was under the control of the Public Works Department. The Cantonment Health Officer addressed the Executive Engineer, Water Works Division, and suggested that the damage should be repaired. The Executive Engineer then wrote to the Executive Engineer, Irrigation, stating that the work seemed to be latter's liability and that it should not cost more than Rs. 300. The Health Officer of the Cantonment then wrote to the Executive Engineer, Irrigation Division, asking if the work could be completed. In the meantime, the Cxecutive Engineer, Water Works Division, sent the Health Officer an estimate for the work for Rs. 456 *plus* extra charges including establishment charges at 28 per cent. which brought the figure to Rs. 644 and suggested that, as the work would greatly aid the military authorities, the latter should provide the

funds. The next move was that the Senior Military Engineering Officer wrote to the Executive Engineer, Water Works Division, stating that as the pools were formed by a scour at the foot of the bridge for which the P. W. D. was responsible the charge could not be made against military funds. The next development was that the Executive Engineer, Irrigation, wrote to the Health Officer stating that the repairs to the scour holes were not necessary as far as the piers of the bridge were concerned and therefore the repairs should be carried out by the Military Department if they were considered essential in the interests of that Department. There the matter stands at present.

7. It is believed that in this case a frank discussion across the table between the authorities concerned would have avoided much unprofitable long-range correspondence and would by now probably have resulted in the necessary repairs having been carried out by agreement.

8. The time now seems ripe for Directors of Public Health and Assistant Directors of Hygiene to take up in earnest this question of getting local combined health committees established where such do not already exist. The information already collected regarding the various health problems can be augmented, and a sound policy would be to place before each committee some tangible objective in the matter of public health improvements. It is a mistake to attempt too large a task. The present state of financial stringency of the Government and local bodies precludes the chances of carrying out any large schemes in the shape of water supply, drainage, anti-malarial measures, but much can be done with the funds which are available if they are expended in the right direction and under proper supervision. Cooperation between the different interests should certainly prevent any overlapping and wastage of effort. If the formation of such committees brings about appreciation of each others difficulties and problems and of the resources which are available to remedy them, a distinct advance is possible towards improving the elementary insanitary conditions which are all too frequent.

ENCLOSURE.

Director of Public Health.	Assistant Director of Hygiene and Pathology and Deputy Assistant Director of Hygiene.	Station.	Present position regarding cooperation between different health authorities.	Health Problems regarding which cooperation is stated to be necessary.
1	2	3	4	5
D. P. H., Punjab	A. D. H. & P., Northern Command and D. A. D. H., Lahore District.	Lahore	Present position not known. Military, railway, police, municipal and district board health authorities are all concerned.	*Railway Area* (*a*) Disposal of waste water from Moghalpura railway station, (*b*) borrow pits between the Moghalpura and Lahore cantonment railway stations to be filled in. *Civil Area* (*a*) Prohibition of wet cultivation for half a mile from cantonment boundaries, (*b*) fencing of Shalimar drain against cattle and other traffic, (*c*) control of pits dug near brick kiln and lime quarries, (*d*) disposal of water from dhobi ghat on the Shalimar drain, (*f*) mosquito-breeding in a pond near the saltpetre factory, and (*g*) control by the police authorities of animals grazing along kutcha drains.
Ditto	Ditto	Sialkot	During the malarial season, informal meetings were held between the Deputy Commissioner, the District Health Officer, the Station Commander, the Senior Military Medical Officer and the Military Anti-malaria Officer. Cooperation is said to be very satisfactory. It would appear, however, that the railway authorities ought to be represented at such meetings.	(*a*) Anti-larval measures in the surrounding villages, (*b*) control of borrow pits at brick fields, (*c*) oiling the pools along the railway line, (*d*) control of mosquito breeding in the police lines, (*e*) removal of railway sullage.

ENCLOSURE—*contd.*

Director of Public Health.	Assistant Director of Hygiene and Pathology and Deputy Assistant Director of Hygiene.	Station.	Present position regarding cooperation between different health authorities.	Health Problems regarding which cooperation is stated to be necessary.
1	2	3	4	5
D. P. H., Punjab.	A. D. H. & P., Northern Command and D. A. D. H., Lahore District.	Ferozepore	Brigade Headquarters invites the District Health Officer, the Municipal Health Officer, the Civil Surgeon and the Railway Medical Officer to discuss a plan of campaign for the problems in column 5.	(*a*) Dry day scheme, (*b*) propaganda work, (*c*) malaria survey and treatment of infected cases.
Ditto	Ditto	Multan	The District Health Officer, the Municipal Health Officer, the Civil Surgeon and the Divisional Medical Officer, North-Western Railway, have been invited to a conference with the military health authorities.	Anti-malarial measures.
Ditto	Ditto	Jullundur	The Municipal Health Officer, the District Health Officer, the Railway Medical Officer and the Executive Officer, Jullundur Cantonment, have been invited to a conference with the military health authorities.	Anti-malarial measures in the villages surrounding the cantonment.
Ditto	Ditto	Amritsar	No information	(*a*) Control of waste water from the municipal dhobi ghat. The waste land between it and the Grand Trunk Road is said to be full of ponds requiring constant treatment, (*b*) improving drainage and conservancy arrangements in Gowalmandi and Serai Bhagwan Dass to get rid of stagnant water and heaps of rubbish.

Ditto	Ditto	Ambala	Monthly conferences are said to have been held from April to September between the District Health Officer, the Health Officer of Sadar Bazar Municipality, the Senior Military Medical Officer, the Medical Officer, North-Western Railway and the Executive Engineer, P. W. D.	No information.
Ditto	A. D. H. & P., Northern Command, and D. A. D. H., Rawalpindi District.	Rawalpindi	Representatives of military, cantonment, municipal, railway and brewery authorities are stated to attend meetings in connection with a joint anti-malarial scheme. The Assistant Director of Public Health, Rawalpindi, and District Health Officer ought to be included.	Sanitation and anti-malarial measures in villages around the cantonment.
Ditto	Ditto	Jhelum	No information.	(*a*) Disposal of excreta from railway premises, (*b*) anti-malarial measures (*i*) control of sullage water drains, from the city and railway premises, which enter the river through the cantonment, (*ii*) control of areas leased out by the municipality for stacking timber, (*c*) prevention of mosquito breeding in the villages of Kotla, Bagga, Lota, Rala, Chitan, Jada, Aslamabad, (*d*) inspection of food shops in the city areas adjacent to the cantonment.
D. P. H., N.-W. F. P.	Ditto	Abbottabad	The civil authorities have in the past subscribed Rs. 400 per annum for anti-malarial measures carried out by the military anti-malarial officer in civil areas. This grant has now been stopped.	(*a*) Control of mosquito breeding places in the civil area, (*b*) control of agriculturists by preventing them from undoing the anti-malarial work carried out in the civil area, (*c*) extension of pucca drains outside the cantonment, (*d*) treatment of the infected civil population, (*e*) stricter hygienic control of the food shops in the civil bazaar, (*f*) earlier notification of infectious diseases amongst the civil population.

ENCLOSURE—*contd.*

Director of Public Health.	Assistant Director of Hygiene and Pathology and Deputy Assistant Director of Hygiene.	Station.	Present position regarding cooperation between different health authorities.	Health Problems regarding which cooperation is stated to be necessary.
1	2	3	4	5
D. P. H., N.-W. F. P.	A. D. H. & P., Northern Command, and D. A. D. H., Waziristan District.	D. I. Khan	No information	Eradication of mosquito breeding in irrigation channels and roadside drains adjacent to the main cantonment and Fort Akalgarh areas.
Ditto	Ditto	Bannu	Ditto	(*a*) Anti-malarial measures, (*b*) excreta disposal, (*c*) water supply, (*d*) control of sand fly breeding places.
Ditto	A. D. H. & P., Northern Command and D. A. D. H., Kohat District.	Kohat	There is said to be a slight degree of cooperation between the military medical authorities and the municipal authorities in regard to anti-malarial measures. The municipal health officer ought to be a member of the anti-malarial committee.	(*a*) Local inhabitants to be persuaded to allow the anti-malarial workers to enter their land for carrying out anti-malarial measures, (*b*) formation of a joint committee under Section 45 of the Cantonments Act to control the unrestricted building which is going on around the cantonment area.
Ditto	A. D. H. & P., Northern Command, and D. A. D. H., Peshawar District.	Peshawar	Cooperation is stated to be required between the military medical authorities and the Executive Officer, Peshawar Cantonment.	(*a*) Anti-malarial measures, (*b*) conservancy, (*c*) the sinking of deep wells, (*d*) control of sand fly breeding places, (*e*) control of animal slaughter and food shops.
Ditto	Ditto	Mardan	No information	(*a*) Treatment of mosquito breeding places outside the cantonment, (*b*) removal of the trenching ground to the opposite side of the city from the cantonment.

Ditto	Ditto	Nowshera	Ditto	(*a*) Provision by the civil authorities of funds for the distribution of anti-malarial drugs amongst the civil population through the medium of the military medical authorities, (*b*) vaccination of the civil population against small-pox.
Ditto	Ditto	Risalpur	Ditto	(*a*) Control of mosquito breeding in brickfields, (*b*) taking of spleen index among children in Ganderi village.
D. P. H., United Provinces.	A. D. H. & P., Eastern Command, and D. A. D. H., Meerut District.	Meerut	Cooperation is stated to be required between the military health authorities and the civil officials.	(*a*) Anti-malarial measures, (*b*) general conservancy.
Ditto	Ditto	Jhansi	Ditto	Anti-malarial measures.
Ditto	Ditto	Bareilly	Cooperation is stated to be required between the municipal, railway and military health authorities.	Ditto.
Ditto	Ditto	Dehra Dun	Cooperation is stated to be required between the District Board and the military health authorities.	Ditto.
Ditto	Ditto	Roorkee	Cooperation is stated to be required between municipal and military health authorities.	(*a*) Anti-malarial measures, (*b*) general sanitary supervision.
Ditto	A. D. H. & P., Eastern Command, and D. A. D. H., Lucknow District.	Lucknow	Cooperation is stated to be required between the municipal, railway and military health authorities.	(*a*) Drainage, (*b*) anti-malarial measures.
Ditto	Ditto	Cawnpore	Ditto	Ditto.
Ditto	Ditto	Allahabad	Ditto	(*a*) Anti-malarial measures, (*b*) general sanitary supervision.

ENCLOSURE—*concld.*

Director of Public Health.	Assistant Director of Hygiene and Pathology and Deputy Assistant Director of Hygiene.	Station.	Present position regarding cooperation between different health authorities.	Health Problems regarding which cooperation is stated to be necessary.
1	2	3	4	5
D. P. H., United Provinces.	A. D. H. & P., Eastern Command, and D. A. D. H., Lucknow District.	Fatehgarh	Cooperation is stated to be required between the municipal or district board authorities and the military health authorities.	(*a*) Anti-malarial measures, (*b*) general supervision.
Ditto	Ditto	Gorakhpore	Ditto	Ditto.
Ditto	Ditto	Almora	Ditto	Ditto.
Ditto	Ditto	Agra	Cooperation is stated to be required between the civil, railway and military health authorities.	Anti-malarial measures
Ditto	Ditto	Muttra	Ditto	Ditto.
Chief Health Officer, Delhi.	A. D. H. & P., Eastern Command, and D. A. D. H., Meerut District.	Delhi Cantonment.	Cooperation is stated to be required between the military and railway authorities.	Ditto.
Ditto	Ditto	Delhi Fort and Notified Area.	Active cooperation exists between the military health authorities and the Director of anti-malaria operations, Delhi.	
D. P. H., Bombay	A. D. H. & P., Southern Command, and D. A. D. H., Bombay District.	Ahmedabad	Liaison between military and civil authorities does exist, but further cooperation is required.	The problem of the "Lalti Tank"

Ditto	Ditto	Deolali	No information	Anti-malarial measures in villages surrounding cantonments.
Ditto	Ditto	Poona } Kirkee }	Liaison is stated to exist and discussion frequently takes place between the civil and military authorities. It is stated however, that the recommendations resulting from these discussions are rarely put into effect.	(*a*) Anti-malarial measures on the Mulla Mutha River, (*b*) Malarial control in the villages surrounding Kirkee, (*c*) linking up of water borne sanitation of Cantonment and City, (*d*) sanitation of Ghorpuri village.
Ditto	Ditto	Belgaum	Cooperation is stated to be required between the civil and military health authorities.	No information.
M. O. H., Bombay City.	Ditto	Colaba	Close cooperation already exists between the civil and military health authorities.	
C. M. O., Rajputana.	Ditto	Nasirabad	Ditto	
Ditto	Ditto	Mount Abu	Ditto	
D. P. H., Holkar State.	Ditto	Mhow	No information	(*a*) Anti-malarial measures, (*b*) anti-cholera measures.
D. P. H., Mysore	A. D. H. & P., Southern Command, and D. A. D H., Madras District.	Bangalore	Close cooperation already exists between the civil and military health authorities.	
D. P. H., Madras	Ditto	Madras	No information	Control of mosquito breeding in Fort St. George area where *A. culicifacies* has recently been identified.
Ditto	Ditto	St. Thomas' Mount.	Ditto	Supervision of the civil bazaar adjoining the cantonment.
Ditto	Ditto	Mallapuram	Ditto	Sanitary control of the bazaar near the British Infantry Lines.

ENCLOSURE—contd.

Director of Public Health.	Assistant Director of Hygiene and Pathology and Deputy Assistant Director of Hygiene.	Station.	Present position regarding cooperation between different health authorities.	Health Problems regarding which cooperation is stated to be necessary.
1	2	3	4	5
D. P. H., Central Provinces.	A. D. H. & P., Southern Command, and D. A. D. H., Deccan District.	Jubbulpore	It is stated that no cooperation exists.	No information.
Ditto	Ditto	Kamptee	No information	Anti-malarial measures.
Ditto	Ditto	Saugor	Ditto	Anti-malarial and anti-dysentery measures.
D. P. H., Hyderabad.	Ditto	Secunderabad	Close cooperation already exists between the civil and military health authorities.	
Ditto	Ditto	Aurangabad	A useful liaison is stated to be maintained between the State and military health authorities.	No information.
Ditto	Ditto	Ahmednagar	Close cooperation already exists between the civil and military health authorities.	
Director of Health Services and I. G. of Prisons, Sind.	A. D. H. & P., Western District.	Karachi	There is excellent cooperation between military, municipal, railway and port health authorities. Each is represented on a committee which meets once a month and discusses common health problems.	
Ditto	Ditto	Hyderabad	There is an anti-malarial committee of which the civil medical officer is a member.	Mosquito breeding in municipal areas,

GIPD—817 PHC with GofI—18-3-30—1,000.

APPENDIX V.

Memorandum on Physical Education Committees.

As an essential part of national effort towards improvement of the health and well-being of the community, physical education has been given serious attention in many countries, particularly during more recent years. In India, also, this important question has received some consideration; in certain provinces, for instance the development of courses of instruction in physical education has for some years been encouraged by means of Government grants, whilst, more recently, two Provincial Governments have appointed special committees to report on the whole subject.

The Health Committee of the League of Nations decided some time ago to set up a "Technical Commission, whose task it would be to define the physiological bases of rational physical education adapted to different ages". In accordance with a procedure found useful in the study of housing problems, the Health Committee has invited all countries to establish "National Physical Education Committees". The function of these National Committees, it was considered, would be to ensure the collaboration of every organisation interested in the subject. The Committees would, at the same time, seek coordination in the international sphere through an International Commission (set up by the Health Committee) which would include a representative of each National Committee.

From every point of view, but particularly from that of the health of the people, it is desirable that India should pay more attention to this question and it would be advantageous to this country to collaborate with the work of the League's International Commission. At the same time it must be remembered that most Indian provinces and a number of Indian States include territory and populations which are in extent and numbers the equivalent of many Western countries. For this reason, it would appear unsuitable to attempt to approach the complex problems associated with the subject through a single National Committee for the whole country. Physical culture, in its wider aspects, is intimately associated with such questions as medical inspection of school children, health education, physique and nutrition and, for the initiation of suitable methods of physical education in any given province or State, the departments of education, medicine and public health of the individual Governments would be best qualified to prepare coordinated schemes suited to the populations under their jurisdiction. In other words, organisations for the control, co-ordination and expansion of all activities relating to physical culture and education should be based on the varying requirements of individual provinces and States.

Under these circumstances, as a preliminary step it is suggested that the Board might recommend to all Provincial and State Governments the constitution of physical education committees whose function would be to advise their Governments as to the steps to be taken to promote physical culture in all its aspects. Once the provincial and State organisations have been constituted and campaigns have been formulated and put into practice, the whole question might be reconsidered at a later date by the Central Advisory Board of Health or by a special committee of that Board. Meantime, it would seem unnecessary to go further. If the Board accepts this suggestion, the Director of the Health Organisation of the League of Nations will be informed of the general position in India and will be placed in touch with such Provincial and State Committees as exist at present and as may come into being at a later date.

APPENDIX VI.

Replies received from Provincial Governments in regard to Resolutions passed by the Board in 1937 on Organisation of Provincial Public Health Departments.

Resolution passed.	Action taken by the provinces.
RESOLUTION No. 1.	
The Advisory Board of Health having considered the facts set out in the Memorandum dealing with the organisation of Public Health Departments recommends that all Provincial Governments should possess powers (*a*) to form Provincial Public Health Services, (*b*) to require municipalities and local boards to appoint medical officers of health, and (*c*) to lay down suitable conditions for the recruitment, qualifications and terms of service of health officers. The Board further recommends that where Provincial Governments do not possess these powers the necessary legislation should be passed with the least possible delay. The Board is further of opinion that for the development of public health organisations and the formulation of public health schemes in municipalities and districts adequate funds should be allotted by Provincial Governments and local bodies. To the same end the system of percentage grants-in-aid from Provincial Governments to their local bodies is one which should be encouraged.	*Orissa.*—The matter is engaging the attention of the Provincial Government. In fact the principle to provincialise the post of health officers has been accepted at a conference of chairmen of district boards and of municipalities convened by the Provincial Government for a discussion on the broad principles to be followed in unifying the existing laws relating to the administration of local bodies in the province, and the recommendations made in this resolution will receive due consideration by the Provincial Government when the local self-Government laws throughout the province are unified by legislation. No information is available regarding the second part of the resolution. *Central Provinces.*—No information has been given with respect to the acquirement of powers by the Provincial Government for the organisation of public health services in municipalities and district boards. As regards the provision of funds for public health services, up to the end of the financial year 1937-38, the Provincial Government has paid grants-in-aid, equal to 50 per cent. of the slaries of :— (*a*) Three medical officers of health, *viz.*, those of Nagpur, Jubbullpore and Amraoti. (*b*) Sanitary Inspectors. In connection with new appointments made recently the advantage of giving grants-in-aid was advocated but, owing to the paucity of funds, the Provincial Government was unable to sanction them. *Madras.*—There are already in this province organised public health services consisting of first class and second class health officers. All health officers under the district boards belong to the category of first class health officers and in the case of 13 district boards, the health officers are being assisted by officers of the status of second class health officers. The pay of the officers employed under district boards is met from provincial funds.

Resolution passed.	Action taken by the provinces.
	Madras—contd.
	First class health officers are also being employed under the bigger and richer municipal councils, while the smaller councils have under them second class health officers. In the case of municipalities twenty five per cent. of the total cost of the health officers inclusive of leave and pensionary contribution is recovered from the Councils, the remaining portion being borne by Government. Special service rules have been framed for these first and second class health officers.
	With regard to the second part of this resolution, it is observed that both the Provincial Government and local bodies in this province are actively assisting (financially and otherwise) in the formulation and execution of schemes relating to water supply, drainage, sanitation, maternity and child welfare, anti-malarial operations, etc.
	Bombay.—The question whether local bodies should not be compelled by law to appoint an adequate health staff and to place adequate funds at their disposal is being referred to the committee appointed by this Government to exmine the affairs relating to local bodies in the mofussil. The committee is also being asked to advise Government in general in regard to the measures necessary to improve the sanitation of municipal and local board areas.
	United Provinces.—The system advocated in the resolution is already in force in this province and necessary rules have been framed for the guidance of local bodies. A provincial Board of Health exists which scrutinises public health schemes framed by local bodies and allots funds for this purpose, provided local contributions are forthcoming.
	Bengal.—The question of provincialisation of the public health services with its necessary implications involving withdrawal (complete or partial) of the existing unfettered control exercised by local bodies is not free from difficulties in this province. It has, however, been already engaging the consideration of this Government.
	Existing provisions of law and the rules made thereunder in regard to rural and municipal areas are considered to be sufficient for requiring municipalities and local boards to appoint medical officers of health and for laying down suitable conditions for the recruitment, qualifications and terms of service of health officers. The matter

Resolution passed.	Action taken by the provinces.
	Bengal—contd.
	will, however, be further considered when amendment of the existing law, which is now under contemplation, is undertaken.
	With regard to the second part of the resolution, a system of making percentage grants already exists in Bengal and contributions are made to local bodies towards the cost of maintaining public health staffs and towards the cost of approved public health schemes, such as water supply, drainage and sewerage. The extension of the system, subject to limitations of finances, is under the consideration of the Government.
	The Provincial Government bears practically the entire cost of a rural health organisation inaugurated with effect from the year 1927-28, involving a liability, at present, of about Rs. 11 lakhs per annum.
	Punjab.—(*a*) The Provincial Government already possess power to form provincial health services. The Punjab public health department was reorganised in 1923 and again in 1927. There is now a district medical officer of health, who is an officer of the provincial health service, in each district with a provincial staff of sanitary inspectors serving under him; in some districts there is also an assistant health officer.
	(*b*) The Provincial Government have framed rules under which the larger municipalities are required to employ at least one whole-time medical officer of health. Twelve such officers are employed at present in the larger municipalities and the provincial Government meets 50 per cent. of their salaries.
	(*c*) Suitable conditions for the recruitment, qualifications and terms of service of health officers have been laid down.
	Within the funds available the provincial Government make allotments to local bodies for the initiation and development of public health schemes. There is a provincial sanitary board to which all such schemes are submitted and grants-in-aid are given on the recommendation of this board.
	Sind.—At present the cadre of provincial public health service consists of two posts, *viz.*, those of the Assistant Director of Public Health and of the Chemical Analyser to Government, who is also

Resolution passed.	Action taken by the Provinces.

Sind—contd.

in charge of the Chemico-Bacteriological Laboratory, Karachi. Consistent with their revenues this Government propose to strengthen cadre as soon as possible.

The Government of Sind are under a statutory obligation to give a grant-in-aid equivalent to two-thirds of the pay of health officers appointed by local bodies. In spite of this liberal provision, only one of the eight district local boards in Sind has appointed a health officer ; and of five borough municipalities (including the Municipal Corporation of Karachi) four have appointed health officers. All attempts to persuade local boards to engage qualified health officers have so far failed and Government are considering the advisability of amending the Local Boards and the Municipal Acts so as to make it compulsory for all district local boards and municipalities, having a population of more than 30,000 in their respective areas of jurisdiction , to appoint qualified health officers.

Some orders prescribing suitable conditions for the recruitment, qualifications and terms of service of health officers are already in force, but this question will be considered in all its aspects after the proposed measure designed to make it compulsory on all district local boards and large municipalities to appoint qualified health officers, has actually been enacted.

The present rate of subsidy granted to local bodies is sufficiently liberal and does not admit of a further increase.

The Provincial Governments of Assam, Bihar and North West Frontier Province have offered no remarks on this resolution.

RESOLUTION No. 2.

In order to promote coordinated effort in preventive medicine between the medical and public health departments, the Board recommends the establishment of a Central Health Board (or Committee) at the headquarters of each province and of a Health Bureau (or Committee) in each district.

Bombay.—The question of establishing district health boards was recently considered by the Provincial Government and dropped. Coordination between medical and public health officers is, however, being maintained as far as possible.

United Provinces.—A Provincial Board of Health already exists and there is no need for such an organization in each district as local bodies have already constituted Public Health Committees The Inspector-General of Civil Hospitals and the Director of the Public Health are, besides other, members of the Provincial Board of Health.

Resolution passed.	Action taken by the Provinces.
	Bengal.—Under the Bengal Local Self-Government Act, 1885, a Public Health Committee has been constituted in each district for the purpose of advising on all matters relating to public health. Its jurisdiction does not, however, extend to municipal areas.
	For the province as a whole there is a Sanitary Board which is presided over by the Secretary to the Public Health and Local Self-Government Department of this Government and in which various interests are represented. This Board advises Government on the soundness and suitability of schemes of water supply, sewerage, drainage, etc., submitted by local bodies, on the order of priority of such schemes and the grants and loans that should be given for them and generally on any matters relating to public health that may be placed before it. The Board is also free to make recommendations to Government *suo moto* on any question of public health concerning the people of the province.
	The question of enlarging the constitution and extending the sphere of activities of the Provincial Sanitary Board and of District Public Health Committee will be considered in due course in the light of further progress of public health activities.
	Punjab.—There is already close cooperation between the officers of the medical and public health departments; in particular the representatives of those departments in the districts (with the representatives of the other beneficient departments) meet quarterly under the Chairmanship of the Deputy Commissioner the meetings being referred to as the Officers' Board in each district. The provincial Government agree, however, that the time is now ripe to put this matter on a more formal footing, and they propose to take steps to establish a provincial board of health together with district boards of health in each district.
	Sind.—In this province, the medical and public health departments are under the administrative control of one officer and the requisite cooperation between the two departments is thus fully ensured. The question of the formation of Provincial and District Health Boards is under consideration.
	N. W. F. Province.—The Provincial Government consider that this being a small province, a Health Board would not be of much value.

Resolution passed.	Action taken by the Provinces.
	Orissa.—No Central Health Board or Committee has yet been formed for the province of Orissa. Steps are however being taken for the formation of such a Board.
	Central Provinces.—There is aleready a Central Public Health Board for the Central Provinces and Berar. District Health Bureaux or Committees cannot be usefully created until and unless the districts are adequately organised in respect of health personnel.
	Madras.—A Health Committee called the Public Health Committee is already in existence in this province.
	Assam.—There is a Pubilc Health Board in Assam consisting of:— The Inspector-General of Civil Hospitals.—(President). The Director of Public Health (Secretary). The Chief Engineer and Secretary to Government in the Public Works Department. Two Commissioners of Divisions; and One non-official Member. The Board has however been practically in abeyance for many years.
	The Government of Bihar has offered no remarks on this resolution.
RESOLUTION NO. 3. The Board desires to bring to the notice of all Governments Provincial Medical Councils and the Medical Council of India the necessity for improvement in the teaching of hygiene and public health as part of the medical colleges and schools curricula for medical qualification and registration.	*Bombay.*—The Surgeon-General with the Government of Bombay has been asked to bring this resolution to the notice of the Bombay University, the Bombay Medical Council and the College of Physicians and Surgeons. *United Provinces.*—The recommendations made in this resolution have been brought to the notice of the Provincial Medical Council and the Inspector-General of Civil Hospitals. *Bengal.*—A copy of the resolution has been forwarded to the Provincial Medical Council inviting their proposals in regard to the improvement of the teaching of hygiene and public health and the question of the action to be taken by the Provincial Government will be considered on receipt of their recommendations. *Punjab.*—The Provincial Government agree as to the necessity for improving the teaching of

Resolution passed. Action taken by the Provinces.

Punjab—contd.

hygiene and public health as a part of the curricula of medical colleges and schools and will take steps to bring the matter before the bodies concerned. The Provincial Government tentatively held the view that public health as a subject in the medical curriculum is at present overburdened with technical matters such as sewage, drainage and water supply plants. It is for consideration whether the amount of instruction in these subjects should not be reduced, further time being devoted to personal and domestic hygiene, ante-natal care, and the hygiene of infancy and childhood together with the principles of sound feeding.

Sind.—There is no separate Medical Council in Sind and the Bombay Medical Council continues to exercise jurisdiction over this Province. There is only one medical school in Sind, which is affiliated to the Board of Physicians and Surgeons, Bombay, who lay down the curricula for the various examinations.

Bihar.—The question of improving the teaching of hygiene and public health in the medical colleges and school of the province is engaging the attention of this Government and a further report will follow showing the measures actually taken for effecting improvements in the teaching of the subject.

Orissa.—With a view to improving the teaching of hygeiene and public health in the Orissa Medical School, Cuttack, the Provincial Government had appointed the Health Officer of the Cuttack Municipality as lecturer in those subjects. Now that an Assistant Director of Public Health has been appointed for the province, a port of his duty will be the teaching of hygiene in the Orissa Medical School.

Central Provinces.—A copy of this resolution is being sent to the Central Provinces Medical Examination Board of which the President is the Inspector General of Civil Hospitals and the Director of Public Health is one of the members.

Madras.—The teaching of hygiene in medical colleges is in accordance with the syllabus prescribed by the Universities. At the instance of the Director General, Indian Medical Service, and the Public Health Commissioner with the Government of India the question of modifying the existing curriculum for hygiene and public health for the M. B. B. S. course, in order to require the students to carry out and report on a field health survey in one of the rural villages and

Resolution passed.	Action taken by the Provinces.
	Madras—contd.
	the surrounding country on the lines followed in King Edward VII College of Medicine, Singapore, is being considered by the Surgeon General in consultation with the Principal, Medical College, Madras.
	In the meantime the views of the Provincial Medical Council have also been invited on the recommendation contained in this resolution.
	Assam.—The subjects of hygiene and public health are taught in the Dibrugarh Medical School. The resolution is being brought to the notice of the Assam Medical Examination Board.
	N. W. F. Province.—Reported that no medical school or college exists in their province.

L90DGIMS—1,000—22-3-39—GIPS